CIVIL AVIATION AUTHORITY (CAA)

NATS COST ALLOCATION

REF: CAA/1778 (SERVICES ORDER 06)

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4 October 2013

FINAL REPORT (REDACTED)

Submitted by:

Cambridge Economic Policy Associates Ltd and BDO LLP

CONTENTS

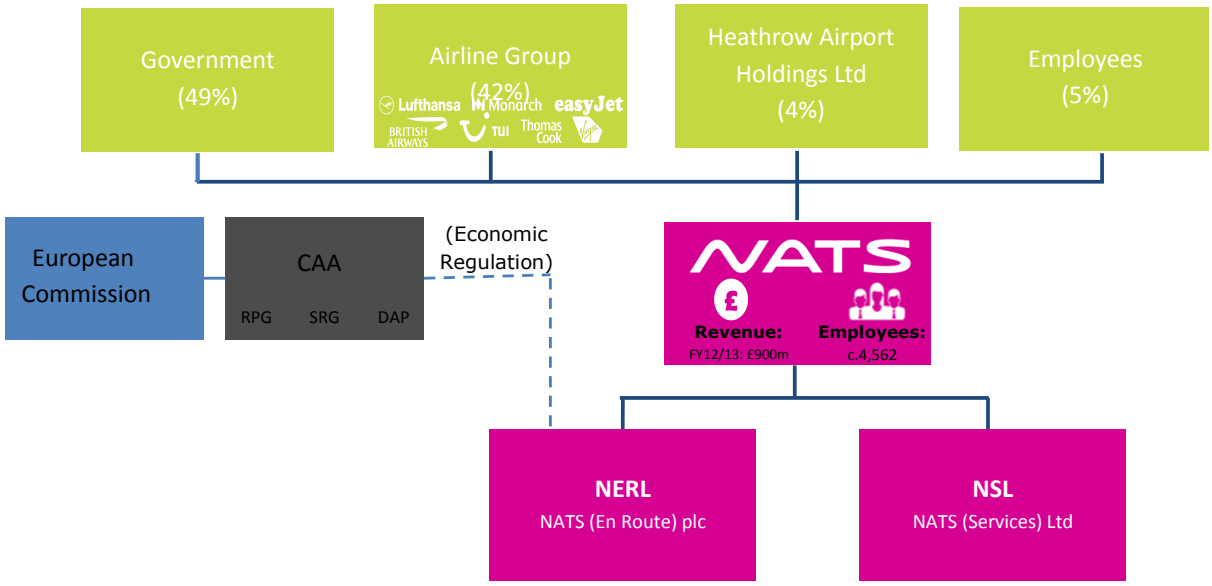
EXECUTIVE SUMMARY

Background

As part of the RP2 price control CEPA and BDO have been appointed by the Civil Aviation Authority (CAA) to review cost allocation processes within NATS the UK's national air navigation service. The CAA is the economic regulator for NERL which carries out the regulated activities of NATS.

The NATS group structure is set out below:

Figure 1: NATS Corporate Structure



Source: NATS

NATS has two subsidiaries NERL and NSL. NERL operates UK and Oceanic en route and London Approach air traffic control services and is subject to price cap regulation. NSL is NATS' commercial subsidiary.

The services provided by NERL include infrastructure services for both military and civil en-route air traffic control managed out of joint operational centres at Swanwick and Prestwick. For the purposes of cost allocation, activities are reported under a number of different services lines. These are described below:

- Eurocontrol provides services for non-military aircraft flying in UK airspace;
- Oceanic provides air traffic control for the Shanwick areas of international airspace;
- London approach provides approach air traffic control services for the five London airports being Heathrow, Gatwick, Stansted, Luton and London City Airports;
- MOD - NERL provides infrastructure services to the Ministry of Defence (MoD) which co-locates its air traffic controllers with civilian staff employed by NATS;
- North Sea Helicopters - covers air traffic services for helicopters travelling to North Sea oil rigs;

- NERL Services to NSL - records costs incurred by NERL under intercompany agreements with NSL e.g. NSL provision of North Sea Helicopter Services on NERL's behalf;
- Other external - which covers other permitted activities of NERL to third parties e.g. onward routed radar services.

Terms of reference

Our terms of reference are to provide to the CAA an analysis to indicate whether cost allocations and apportionments that NATS makes, between: (i) its licensed business and unlicensed business; (ii) the different segments of its licensed business; and (iii) the allocations that it makes to operating and capital costs, for the purpose of regulating charges and setting cost effectiveness targets for various segments of the NATS business, can be relied upon.

In particular, the work scope requires us to examine whether the allocations, attributions and cross charges (including between operating costs and capital expenditure) applied by NATS are fit for the purpose of regulation considered against:

- suitability of cost allocation methods;
- adequacy of update process;
- transparency of process including the process for sign-off procedure for accepting costs from affiliates; and
- consistency of application including: (i) whether the same rules are applied for costs allocated from NERL to affiliates as from affiliates to NERL; (ii) comparison of actual allocations to the plan for CP3; and (iii) comparison of planned allocations in the initial business plan for RP2 to current allocations.

Previous studies

In undertaking this study we have considered similar work which has been completed previously by KPMG and LECG. Our review of their reports suggests that cost allocation processes within NATS have improved over time; for example, through the introduction of NIBS - a structured system for cost allocation built on a SAP platform. Previous work has concluded that the approach is fit for purpose.

In 2009 LECG concluded in relation to the new system (NIBS) that:

- *"The overall process used to generate NERL's regulatory submission is not a fully integrated process, though the vast majority of the process is contained within NIBS".*
- *"The current process addresses most of the recommendations made by KPMG in 2005 and hence the overall process can be said to have improved"*
- *"The CAA can take comfort about the robustness of NIBS given its wider financial purpose and the reviews of other independent consultants".*

- *"Overall, we believe that the new system is fit for purpose, in terms of allocating NERL's statutory accounting revenues and costs to different NERL service lines, under the current regulatory arrangements."*

Previous studies have not found any evidence of systematic misallocation of costs or revenues, although some errors have been noted and potential areas of improvement have been identified.

Approach

Our approach to the project has built upon previous studies. We have:

- reviewed the cost allocation system applied by NATS for changes since the last review;
- considered actions taken in respect of recommendation made by previous studies; and
- sample tested the allocation process to confirm that practice follows process.

We have considered all NERL service lines including MoD and our findings are provided in each subsequent chapter. We have also briefly considered revenue allocation in each chapter.

Our approach has been to consider whether the processes of cost allocation are fair and appropriate. We have not looked at transactions; that is, at whether costs have been allocated to the correct activity initially. We consider this process to be within the scope of audit rather than this review.

Our analyses generally use management accounts information not regulatory accounts. This is because only management accounts are reported at detailed service line level. A reconciliation of management accounts to regulatory accounts in however provided in Annex 1

In carrying out this work we have relied upon the NATS team to provide information. Our data request log is provided in Annex 2. We have also conducted site visits and undertaken system testing at both NATS headquarters in Whiteley and at the Swanwick operations centre. This report sets out our conclusions and recommendations.

Summary of findings

The cost allocation system (NIBS)

Much of the allocations process is systematic, utilising activity driver percentages within the SAP/BPS system Regulatory Service Line model. This has been the focus of our review and testing. However, it is important to understand that the time recording system (time sheets are processed for all staff) and the process of coding intra-group transactions to activities also have an impact on the allocation of costs and occur prior to the systematic service line allocation process. NERL emphasise that the integral parts of the Activity Management process are all in SAP and that costs are carefully planned and actuals subject to scrutiny by all levels of management as part of the business review process. This allocation at transaction level has not been the focus of our review as this is covered in the external statutory and regulatory accounts audits.

It is also important to note that the allocation of assets between service lines is also performed outside the core activity based allocation system. Information on new assets (and disposals) is

extracted from the SAP asset module into a spreadsheet. The same allocation drivers and percentages are utilised but have to be extracted from SAP for this purpose. There is therefore a dependence on these extraction procedures and the integrity of the spreadsheet allocation itself to achieve the allocation of asset information. As stated above the output of this assets spreadsheet is an input to the regulatory accounting spreadsheets (including the Regulatory Asset Base [RAB]) where final adjustments to derive the regulatory accounts and submission occur. NERL has noted that this is an annual process and a relatively small part of the whole system. It also considers that at this time it is not cost effective to invest further in the existing system as the SAP BPS module is reaching the end of its life from a support perspective.

Depreciation (and profits and losses on disposal of assets) are allocated to service line via the core activity based allocations system. Similarly revenue is also handled through the core activity based allocations system but utilises driver percentages that pass the cost through (by utilising a principle of 100% allocation to the same area) to the relevant service line.

Overall NERL's processes appear robust; our testing has not identified any significant concerns and therefore we conclude that the system is fit for purpose. However, as indicated in subsequent chapters, we consider that there would be benefit in reducing the use of off line spreadsheets and processes.

Allocation of operating costs and revenues

Allocation of operating costs and revenues occurs within the automated part of the system. Revenue allocation is straightforward; it is allocated 100% to service lines via a single driver and has therefore not been the focus of our review. We note however that one of the nominal account codes we reviewed (Income – Eurocontrol; MoD Shared Facs) was not clearly titled as it is allocated 100% of revenue to the MoD service (i.e. it does not allocate any revenue to the EC service line). Therefore we recommend that this account code title be updated.

In contrast, 70% of costs are split between service lines. The most common drivers for cost are the workstation drivers accounting for 43%; 16% use turnover drivers and for 11% of costs an 'other' driver is applied. We have reviewed driver percentages, driver maintenance, capability adjustments and consistency over time and have found no major concerns although a number of minor recommendations emerge from detailed testing.

Allocation of capex costs

External capex charges are coded direct to the project activities. Capitalised staff costs are derived from time sheet recording to reallocate staff costs to activities (capital projects) based on the hours charged at standard hourly charge out rates. A further process charges back to activities (both capital and non capital) at year end any labour under/over recovery following charges being made at standard rates. This is effectively the first stage of cost allocation and precedes the spreadsheet based asset allocation process described below.

Fixed assets are accounted for within SAP through the assets module. Capital projects are established within SAP at activity level and costs are charged prior to further allocation to these capital activities. The SAP module derives depreciation charges and profits/ losses on disposal

of assets which are allocated to service lines through the same process utilised for all operating costs, namely the BPS Service Line Model. The off system RAB spreadsheet is utilised to restate calculated depreciation charges in line with the Regulatory Accounting Guidelines. Our testing has indicated that the same service line drivers have been utilised within the BPS Service Line Model and the asset allocation spreadsheet. We have found no evidence of a mismatch between assets and depreciation.

The same allocation drivers are utilised for capital asset allocations via a standalone spreadsheet developed for this purpose. This spreadsheet is used to allocate the following in year movements by service line:

- additions to tangible fixed assets;
- proceeds of the disposal of tangible fixed assets; and,
- grants and contributions to tangible fixed assets.

The output from this standalone spreadsheet is an input to the regulatory accounts spreadsheets where any final adjustments are made and from which the RAB information is derived.

Our analysis has suggested that the processes employed are robust but that risk could be reduced by further integration of fixed asset allocation processes into NIBs.

Allocation of intercompany costs

There are a number of different entities within the NATS group and a significant amount of trading between them, although in the overall scale of NATS operations the level of cost associated with these activities is small.

Our major finding in this area is that the processes of cost and revenue allocation are complex and are not transparent. While we have been able to undertake high level testing which shows that the amounts anticipated under the agreements flow through into the management accounts with a high level of accuracy, we have been unable to trace the costs and revenues for individual agreements and in particular it is not possible to ascertain net ICA margins from the system.

In addition, although required where possible, NERL consider that market testing of intercompany pricing is not possible given the specialist services that it requires and it is therefore not routinely undertaken. In relation to arms-length pricing (required where market testing is not practicable) NERL states that its analysis is captured in correspondence and in its pricing model but we have not seen evidence to this effect.

We consider that there would be benefit in improving the transparency of inter-company processes generally and in relation to ICA's ensuring that costs and revenues can be more readily traced within the accounting systems. To the extent that it is not doing so, we consider that NATS should ensure that it is fully compliant with requirements for market testing/arms-length pricing.

Conclusions

In the following sections we review NATS response to the most recent previous study, summarise our conclusions and provide our own recommendations.

Response to previous studies

Our work follows reviews by other consultants as part of previous price controls. The most recent prior review was carried out by LECG in 2009 and it concluded that the systems were fit for purpose. Previous reviews have however identified some weaknesses and errors and have made recommendations for improvement.

We set out below how we consider NATS has responded to the recommendations of the previous LECG study.

Table 1: LECG recommendations and CEPA/BDO view of current position

Ref LECG	Area	LECG View/Recommendation	CEPA/BDO view of current position
3.69-71	Overall process	Some significant processes are not fully integrated into the NIBS system which raises the risk of error/inconsistency and impacts transparency. LECG suggested that NERL should consider further whether NIBS could be extended to become a fully integrated system in the longer term. This would include adding further functionality to enable it to produce all financial statements, regulatory submissions and reduce manual intervention	Not addressed – NATS considers that the cost associated with such a change will not be outweighed by the benefits.
4.22	Inter company	It would be more transparent to disaggregate group insurance into costs that could be allocated using a single driver. Such an approach would be consistent with NATS' approach more generally and would be more transparent	We are advised that insurance costs have been disaggregated and blended drivers have been replaced by use of the turnover driver for Insurance costs
4.72	Inter company	Although immaterial overall it was suggested that for consistency with wider recommendations health and safety costs should be allocated by FTE and turnover drivers should be replaced by EPMU given regulatory precedent	Not addressed – NATS and CAA concluded that the change to EPMU change was unnecessary
5.20	Capex	LECG recommended that an equivalent analysis to that set out in table 5-3 be undertaken (comparison of allocation by engineering judgement and that used for depreciation). In the longer term is was	The process has been changed such that it is consistent throughout

Ref LECG	Area	LECG View/Recommendation	CEPA/BDO view of current position
		suggested that the process of using engineering judgement and the process for treatment of depreciation be made consistent	
5.26	Capex	New accounting rules mean that borrowing costs are to be capitalised. If interest is also capitalised then this would result in a double count. At the time NERL confirmed it would not capitalise interest	Interest has not been capitalised in the Regulatory Accounts
6.71	Revenue and opex	LECG found that support for driver input data was poor. There was a high prevalence of discrepancy. LECG therefore recommended a full review of files and conformity with best practice which is: • easy to follow/audit • links to primary evidence • updated annually	Significant improvement has been made but we consider that there is scope for some limited further improvement e.g. in setting out greater rationale for drivers
6.74	Revenue and opex	LECG considered that allocation of these costs on the basis of EPMU to be more appropriate than turnover drivers. LECG cited significant regulatory precedent for this approach	Not addressed – NATS and CAA concluded that this change was unnecessary

Suitability of cost allocation methods

The processes employed by NATS to achieve cost allocation are more complex than we originally understood. We have reviewed the SAP based system which automates the allocation of operating cost and revenue and found that the processes are fit for purpose. There have been improvements over time; for example, to driver administration, and the system is relatively straightforward. We have noted a few small areas for improvement and these appear in our recommendations below.

However, our initial view that the central SAP based system manages all of the allocation processes, irrespective of type of cost, was a misunderstanding. Significant processes still happen in off line spreadsheets, as was the case at the time of the last review. For example, although capex allocation is in principle the same as opex cost allocation, parts of the process are completed off line and we consider that this raises the risk of error and misallocation. However, we note that NATS uses the same team to manage opex and capex allocation to minimise this risk and we have found no errors.

In relation to intercompany agreements the processes for cost allocation are somewhat less transparent than is the case for other parts of the system and it has been more difficult to test them. However, high level testing suggests the processes are robust; we have found no major issues and at totals level we have been able to reconcile agreements to the data held in the system

and then to the management accounts. At a more granular level testing has however been more difficult to complete and in some cases we have not been able to fully test the approach employed by NATS. This is the case in relation to the allocation of overheads to both MSAs and ICAs where the BPS system does not currently enable overhead costs to be allocated to individual contracts. As a result and in relation to ICA's we are not able to fully establish the margins being charged, because the relevant overhead costs cannot be separately identified. In relation to intercompany trading we also cannot confirm that market testing/arm's length pricing processes being followed.

Overall we have a high level of confidence in processes that are fully automated and that we have been able to review and replicate. We note that these processes are applied to the majority of costs. We are also confident at a high level about processes which sit outside of the main system but have some relatively minor concerns that we have been unable to fully address. The elements of cost affected by this are small. Overall, we agree with LECG's recommendation that NATS should consider full automation of the system. We note that the most sensible point at which to deliver this will be when the BPS software is replaced (it is close to life expiry now).

Transparency

As indicated above, the system is complex and the mix of automated and off line processes does not aid transparency. It has been particularly difficult to understand how some of the offline processes work. The best example of this is in relation to intercompany trading where it is not possible to trace costs for individual agreements through the system. In all cases however there appears to be a logical and established process for cost allocation the issues are that this is not always captured in a single place and the accounting systems do not readily support detailed analysis of these costs.

Consistency

NATS has emphasised that improvements have been made to the allocation system since it was last reviewed, and we have seen the positive impacts of this. However, the changes have not extended to fully integrating all processes. As part of our review of system operation we have obtained the asset allocation spreadsheets so that we may test the process. These are linked spreadsheets with links to other spreadsheets that fall outside our review. While we have been able to test allocation and have not found any significant errors, we consider that there is a risk in running multiple set of spreadsheets.

In our opinion consistency of the allocations processes would be improved if they were all integrated within NIBS and if the use of off system spreadsheets and processes was reduced. We have also identified that NATS does not seem to be fully compliant with its own process in relation to market testing and arms-length pricing.

In relation to consistency over time we find that the current business plan is generally consistent with the costs recorded in the allocation systems (that is, recent actuals). Where significant changes in costs are apparent in the business plan there is a rational explanation for them; for example, in relation to increased expenditure in the Oceanic service line.

Application of rules

The terms of reference also ask us to consider whether the same rules are applied to costs allocated from NERL to affiliates as from affiliates to NERL. While we are able to say that the rules of cost allocation are applied consistently across all main areas of cost there are some areas within intercompany charging where we are unable to fully test for a consistent approach; for example, in relation to margins on particular ICAs.

Recommendations

Our recommendations are set out in each chapter but are also summarised Table 2 below:

Table 2: CEPA/BDO recommendations

	Area	Recommendations
2	Approach to cost allocation	• Given the risk of error/misallocation arising from the use of off system spreadsheets we consider that it is appropriate to consider full integration of the system as part of the process of deciding how to address the end of life issue for the SAP BPS module.
3	Allocation of revenue and operating costs	We recommend that: • NERL undertakes some additional high level analysis into the costs of different workstation capabilities/ complexities to ensure that the scoring matrix is formed in as objective a fashion as possible. • NERL develops a process for updating the turnover drivers used for cost allocation in BPS, subject to it being a manageable task, to ensure that statutory and regulatory accounts are consistent. • As part of the process of next updating driver support files, greater rationale/explanation for the driver should be provided where limited explanation is currently available. • For driver variables which are currently considered constant over time (as forecasts are "not practical"), NERL consider whether simplifying assumptions could be made to ensure that forecasts for all drivers are variable over time. • On balance, further consideration should be given to replacing turnover with EPMU drivers. • NERL rename the 'Turnover – UKATS' driver (BIN25) as 'UKATS - External'.

	Area	Recommendations
		• NERL rename the "Income – Eurocontrol; MOD Shared Facs" revenue nominal account code
4	Allocation of capex costs	• LECG indicated a view that greater degree of transparency would be achieved by extending NIBs to fully incorporate capex. We agree with this view. Consistent with our recommendation in Chapter 1 we consider that the capex allocation process should be brought within the NIBS system. NERL has stated it will consider this when the time is right but will not change the system to accommodate it unless the benefits outweigh the costs.
5	Operation of intercompany agreement	• In relation to both MSAs and ICAs a lack of transparency, at a detailed i.e. individual agreement level, is the key issue that we identify. Overall it seems that intercompany trading is an area where there is established custom and practice but that this is not formally captured in any one place. • We consider that NERL should establish whether it is feasible to separate MSA costs from other costs within a given Business Area such that is can improve the accuracy of reports that depend on this information. • In relation to ICAs we recommend that NATS consider how the system might be developed to provide greater transparency. We also consider that NATS should ensure that is compliant with its own procedures to market test or where not possible develop and document the approach taken to arms-length pricing under its ICAs.

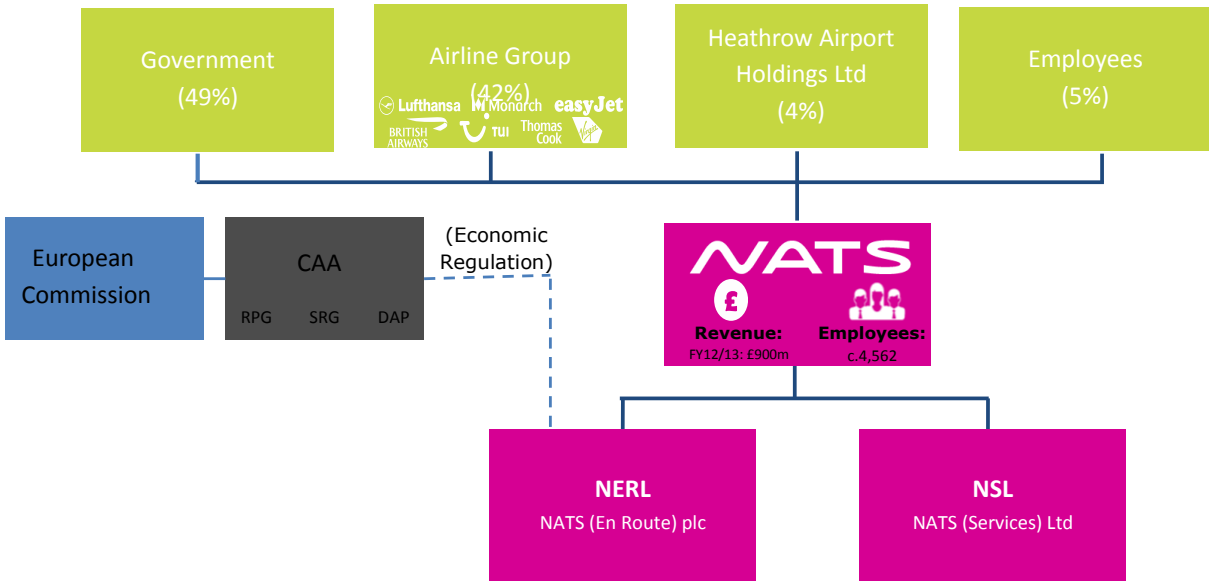
1. INTRODUCTION

1.1. Background

As part of the RP2 price control CEPA and BDO have been appointed by the Civil Aviation Authority (CAA) to review cost allocation processes within NATS the UK's national air navigation service. The CAA is the economic regulator for NERL which carries out the regulated activities of NATS.

The NATS group structure is set out below:

Figure 1.1: NATS Corporate Structure



Source: NATS

NATS has two subsidiaries NERL and NSL. NERL operates UK and Oceanic en route and London Approach air traffic control services and is subject to price cap regulation. NSL is NATS commercial subsidiary. It provides a range of services mainly to external third parties including air traffic control services to a number of UK airports and also to airports in Spain under a joint contract with Ferrovial. It also offers a range of consultancy services and provides some services to NERL

The services provided by NERL include infrastructure services for both military and civil en-route air traffic control managed out of joint operational centres at Swanwick and Prestwick. For the purposes of cost allocation activities are reported under a number of different services lines. These are described below:

- Eurocontrol provides services for non-military aircraft flying in UK airspace;
- Oceanic provides air traffic control for the Shanwick areas of international airspace;
- London approach provides approach air traffic control services for the 5 London airports being Heathrow, Gatwick, Stansted, Luton and London City Airports;
- MOD - NERL provides infrastructure services to the MOD which co-locates its air traffic controllers with civilian staff employed by NATS;

- North Sea Helicopters - covers air traffic services for helicopters travelling to North Sea oil rigs;
- NERL Services to NSL - records costs incurred by NERL under intercompany agreements with NSL
- Other external - which covers other permitted activities of NERL to third parties e.g. onward routed radar services

Figure 1.2 below provides an overview of how these different service lines fit together.

Figure 1.2: NERL service lines

<table>
<tr><td colspan="6">NATS (EN ROUTE) PLC (NERL)</td></tr>
<tr><td colspan="5">UK Air Traffic Services (UKATS)</td><td rowspan="3">Oceanic (OC)</td></tr>
<tr><td colspan="3">En route (UK) Business</td><td colspan="2">Other permitted business</td></tr>
<tr><td rowspan="2">Eurocontrol (EC)</td><td rowspan="2">London Approach (LA)</td><td rowspan="2">North Sea Helis (NSH)</td><td rowspan="2">Ministry of Defence Contract (MoD)</td><td>Other Services</td></tr>
<tr><td>Services to NSL and NATSNav (NERL to NSL)</td><td>Other external income (Other)</td></tr>
</table>

Source: NATS 2013/14 workstation driver model [1]

For the purposes of regulation there are two services which are subject to separate revenue and price caps: UK Air Traffic Services (UKATS) is subject to a revenue cap and contains the main Eurocontrol service in a single till with income from London Approach, North Sea Helicopters, MoD and other services as shown in Figure 1.2 above; the Oceanic service operates under a separate price cap. The revenue stream "London Approach" comes from terminating flights and is unique amongst the NERL service lines in that its revenue does not cover the costs of the function. There is currently a policy issue of whether the costs of the London Approach should be covered wholly by terminal traffic (through the LA charge) or en route traffic by being integrated into the Eurocontrol charge or by some combination of terminal and en route revenues. This is the subject of an imminent CAA consultation.

The regulatory accounts report the regulatory performance of UKATS and Oceanic. The management accounts report detailed service line information as reflected in Figure 1.2 above.

1.2. Terms of reference

As part of the RP2 price control CEPA and BDO have been appointed by the CAA to provide it with analysis to indicate whether allocations and apportionments that NATS makes between: (i) its licensed business and unlicensed business; (ii) the different segments of its licensed business; and (iii) the allocations that it makes to operating and capital costs, for the purpose of regulating charges and setting cost effectiveness targets for various segments of the NATS business can be relied upon.

In particular, the work scope requires us to examine whether the allocations, attributions and cross charges (including between operating cost and capital expenditure) applied by NATS are fit for the purpose of regulation considered against:

[1] This is consistent with CAA's proposals for NERL CP3 Price Control Review, 2011-2014, Feb 2010, p.14

- suitability of cost allocation methods;
- adequacy of update process;
- transparency of process including the process for sign-off procedure for accepting costs from affiliates; and
- consistency of application including: (i) whether the same rules are applied for costs allocated from NERL to affiliates as from affiliates to NERL; (ii) comparison of actual allocations to the plan for CP3; and (iii) comparison of planned allocations in the initial business plan for RP2 to current allocations.

1.3. Potential issues

In undertaking this review we have had in mind a number of issues that can arise in cost allocation between parts of regulated business and between their regulated and unregulated activities. We briefly describe some of those issues below.

- ***Cost allocation between licensed and unlicensed business*** **-** where business have both regulated and unregulated components there is an incentive on the company to cross-subsidise unregulated activity via the licensed businesses; that is, to overstate the scale of the licensed business cost base. In relation to this project we would be looking for an appropriate approach to allocation that is consistently applied irrespective of the regulatory status of the activity;
- ***Prices charged by licensed to unlicensed business*** **–** similarly there is an incentive to undercharge unlicensed elements of the business. We would examine whether the prices charged by NATS' licensed businesses to the unlicensed segments are lower than any comparable market rates;
- ***Prices of unlicensed activities*** **-** Another issue of concern is whether the prices of unlicensed activities are higher or lower than the market rate, as both scenarios could be indicative of possible abuse of a dominant position. For example, prices of unlicensed activities which are lower than the market rate could suggest possible market abuse if combined with a return lower than the market;
- ***Returns on unlicensed activities*** **–** another high level indicator of misallocation might be unlicensed businesses having higher than market returns.

1.4. Previous studies

In undertaking this study we have considered similar work which has been completed previously by KPMG and LECG. Our review of their reports suggests that cost allocation processes within NATS have improved over time; for example, through the introduction of NIBS a structured system for cost allocation built on a SAP platform. Previous work has concluded that the approach is fit for purpose.

In 2009 LECG concluded in relation to the new system (NIBS) that:

- *'The overall process used to generate NERL's regulatory submission is not a fully integrated process, though the vast majority of the process is contained within NIBS.*

- *The current process addresses most of the recommendations made by KPMG in 2005 and hence the overall process can be said to have improved.*
- *The CAA can take comfort about the robustness of NIBS given its wider financial purpose and the reviews of other independent consultants.*
- *Overall, we believe that the new system is fit for purpose, in terms of allocating NERL's statutory accounting revenues and costs to different NERL service Lines, under the current regulatory arrangements.'*

Previous studies have not found any evidence of systematic misallocation of costs or revenues, although some errors have been noted and potential areas of improvement have been identified. As a result of each previous review recommendations have been made for further improvement. In 2009 LECG made a number of recommendations which are set out in the table below:

Table 1.1: LECG recommendations

Ref LECG	**Area**	**LECG View/Recommendation**
3.69-71	Overall process	Some significant processes are not fully integrated into the NIBS system which raises the risk of error/inconsistency and impacts transparency. LECG suggested that NERL should consider further whether NIBS could be extended to become a fully integrated system in the longer term. This would include adding further functionality to enable it to produce – all financial statements, regulatory submissions and reduce manual intervention
4.22	Inter company	It would be more transparent to disaggregate group insurance into costs that could be allocated using a single driver. Such an approach would be consistent with NATS approach more generally and would be more transparent
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5.20	Capex	LECG recommended that an equivalent analysis to that set out in table 5-3 be undertaken (comparison of allocation by engineering judgement and that used for depreciation). In the longer term is was suggested that the process of using engineering judgement and the process for treatment of depreciation be made consistent
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		double count. At the time NERL confirmed it would not capitalise interest
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6.74	Revenue and opex	LECG considered that allocation of these costs on the basis of EPMU to be more appropriate than turnover drivers. LECG cited significant regulatory precedent for this approach

1.5. Approach

Our approach to the project has built upon previous studies. We have:

- reviewed the cost allocation system applied by NATS for changes since the last review;
- considered actions taken in respect of recommendation made by previous studies; and
- sample tested the allocation process to confirm that practice follows process.

We have considered all NERL service lines including MoD and our findings are in each subsequent chapter. We have also briefly considered revenue allocation in each chapter.

Our approach has been to consider whether the processes of cost allocation are costs fair and appropriate. We have not looked at transactions i.e. at whether costs have been allocated to the correct activity initially. We consider this process to be within the scope of audit rather than this review.

Our analyses generally uses management accounts information not regulatory accounts. This is because only management accounts are reported at service line level. A reconciliation of management accounts to regulatory accounts in however provided in Annex 1

In carrying out this work we have relied upon the NATS team to provide information. Our data requests the list of data provided in response are set out in Annex 2. We have also conducted site visits and undertaken system testing at both NATS headquarters in Whiteley and at the Swanwick operations centre. This report sets out our conclusions and recommendations.

The remainder of the report is structured as follows:

- Chapter 2 summarises the NATS approach to cost allocation and provides our conclusions on the transparency, consistency and suitability of the systems employed by NATS;
- Chapter 3 discusses the allocation of revenue and opex costs;
- Chapter 4 covers the allocation of capex costs;
- Chapter 5 considers the operation of intercompany agreements;
- Chapter 6 sets out our conclusions and recommendations.

2. SUMMARY OF NATS APPROACH TO COST ALLOCATION

2.1. Introduction

We started our review of the appropriateness of cost allocation by understanding the systems that NERL has in place to achieve this. In particular we have considered how these systems allocate costs and revenues to services lines and the operation of intercompany trading. Our start point for the review was the similar exercise carried out by LECG in 2009. We have updated this for changes to the systems and have added further detail where we consider it helpful to do so. However our diagram of the system and the identification of all areas that impact the allocation of costs and revenue differ from that produced by LECG.

2.2. LECG approach and findings

LECG found that some significant processes were not fully integrated into the NIBS system which they considered raises the risk of error/inconsistency and impacts transparency. LECG suggested that NERL should consider further whether NIBS could be extended to become a fully integrated system in the longer term. This would include adding further functionality to enable it to produce – all financial statements, regulatory submissions and reduce manual intervention.

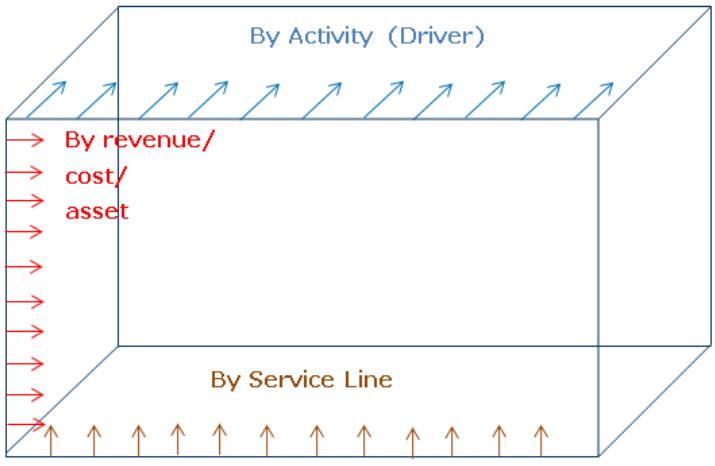
2.3. Revenue and cost allocation process for NERL

The process comprises the following elements:

- NATS Integrated Business System (NIBS) is based on the SAP R3 enterprise resource planning (ERP) system, a large scale commercial off-the-shelf (COTS) package and includes:
    - Financial accounting transactions including purchase to pay, sales invoice to cash, payroll, asset accounting, etc.;
    - All transactions have an accounts coding structure which is retained as costs are allocated via the activity based costing system to allow cost reporting at activity level. Transactions also have an activity coding structure differentiating capex and opex activities for all costs and revenue;
    - Time sheet recording for all staff utilised to reallocate staff costs (charged at work centre level) to activities based on the hours charged at standard hourly charge out rates – this is effectively the first stage of cost allocation and is an integral part of the activity-based costing system described below;
    - The allocation of intra-group charges by coding the costs to those activities where NERL believes the charges should be made based on Inter Company Agreements - this is achieved by populating SAP journal templates, based on the nature of the services provided, and uploading them to the SAP system and is effectively another form of cost allocation;

- A SAP PS (Project System) activity based costing system that takes labour costs based on timesheets, non staff costs, depreciation and intercompany costs to provide a total operating cost model. SAP PS also holds the revenues and has the capex costs for the LTIP projects. This information on both a plan and actual basis forms the basis of NATS management information and is monitored and controlled as part of ongoing business reviews. This data can is reported on using SAP ERP and BW;
- A SAP BPS Regulatory Service Line model based on plan and actual activity data as described above and utilising workstation and other driver tables based on offline spreadsheets. The workstation drivers are based on criteria relating to the complexity, number and purpose of the workstations that are in use in the operations rooms. The supporting driver spreadsheets provide the basis of the allocation of costs for an activity by service line. The percentages by service line for each driver are held in a table within the BPS Service Line Model (see Figure 2.2 below) and are applied to costs and revenues aggregated at activity code level and forms the basis of all service line financial reporting and planning as well as underpinning regulatory and statutory accounts;
- Figure 2.1 below illustrates the alternative views of the accounting information that the BPS Service Line Model provides. BPS allocates costs and revenues to NERL's service lines using a set of drivers, with a single driver applied to each cost/revenue line. Therefore the data in BPS can be aggregated / analysed in three different ways: by cost/revenue category; by service line; or by driver.

Figure 2.1: Diagram showing how costs may be viewed by type of expense, by activity and by service line following allocation



Source CEPA Consortium

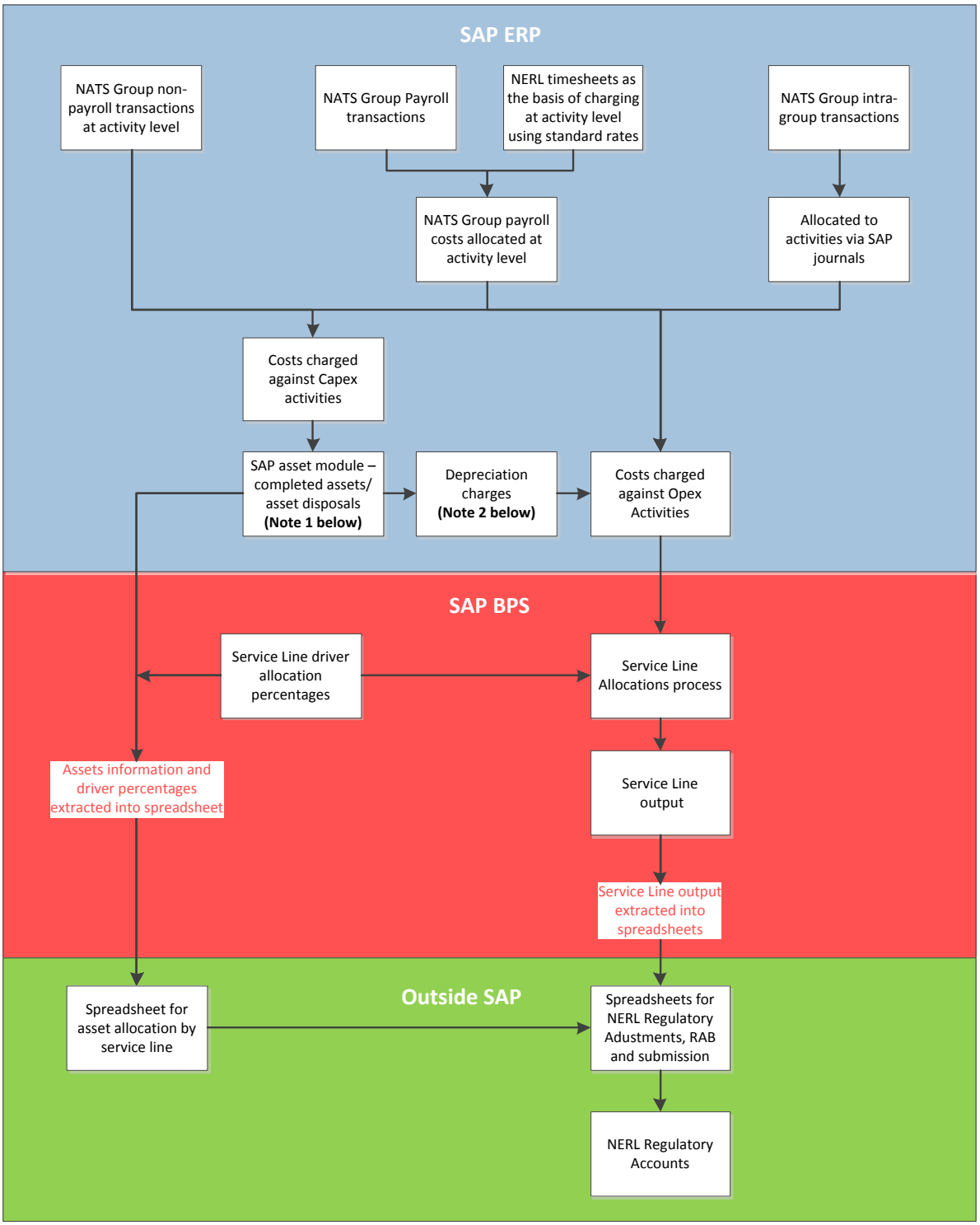
- The BPS Service Line Model utilises SAP Business Warehouse (BW) for reporting. The Business Planning System (BPS) capable of allocating and reporting the cost information by service line (plan and actual) utilising a range of parameters including driver versions and report types - the output of allocated costs represents part of the accounting records of the group and feeds off-system spreadsheets utilised to support the production of statutory and regulatory

accounts (see also capex spreadsheet below that also feeds these spreadsheets and which ultimately derives the information that is represented by the Regulatory Asset Base (RAB); and

- An "off-system" process for allocating fixed assets which involves extracting asset information from the SAP assets module and loading the information into a spreadsheet where the driver percentages used in the NIBS system are utilised to allocate the assets by service line This is used as input to the preparation of the Regulatory Accounts on an annual basis. It is important to understand that this is not an integrated system and that the spreadsheet driver information is maintained separately from the driver tables in the NIBS system. NERL has emphasised that this is a relatively small part of the overall system and is a process performed once a year only.

The cost allocation process is described in diagrammatic form below:

Figure 2.2: NERL cost allocation process



Note 1 – Assets under Construction and Assets information is passed through the BPS system for Management Accounting purposes
Note 2 – Depreciation for Statutory Accounting purposes is revised via the assets spreadsheets for Regulatory Accounting purposes

Source CEPA Consortium based on discussions with NERL

2.4. Summary

Much of the allocations process is systematic utilising activity driver percentages within the SAP/BPS system Regulatory Service Line model. This has been the focus of our review and testing. However it is important to understand that the time recording system (time sheets are processed for all staff) and the process of coding intra-group transactions to activities also have an impact on the allocation of costs and occur prior to the systematic service line allocation process. NERL emphasises that the integral parts of the Activity Management process are all in SAP and that costs are carefully planned and actuals subject to scrutiny by all levels of management as part of the business review process. This allocation at transaction level has not been the focus of our review as this is covered in the external statutory and regulatory accounts audits.

It is also important to note that the allocation of assets between service lines is also performed outside the core activity based allocation system. Information on new assets (and disposals) is extracted from the SAP asset module into a spreadsheet. The same allocation drivers and percentages are utilised but have to be extracted from SAP for this purpose. There is therefore a dependence on these extraction procedures and the integrity of the spreadsheet allocation itself to achieve the allocation of asset information. As stated above the output of this assets spreadsheet is an input to the regulatory accounting spreadsheets (including the RAB) where final adjustments to derive the regulatory accounts and submission occurs. NERL has noted that this is an annual process and a relatively small part of the whole system. It also considers that at this time it is not cost effective to invest further in the existing system as the SAP BPS module is reaching the end of its life from a support perspective.

Depreciation (and profits and losses on disposal of assets) are allocated to service line via the core activity based allocations system. Similarly revenue is also handled through the core activity based allocations system but utilises driver percentages that pass the cost through (by utilising 100% to the same area) to the relevant service line.

We have not identified any major issues with the system and therefore conclude that it is fit for purpose. However we make a number of points about appropriateness, transparency and consistency below.

2.5. Appropriateness of the system

Since the last review NERL considers that the system has been improved. It has stated that the SAP BPS service line model has been developed to offer greater functionality, flexibility and transparency through improved reporting. In addition NERL has implemented a new workstation driver model to respond to the LECG recommendation for greater clarity and control. We have reviewed these developments and agree that there has been an improvement.

As noted above however, although much of the allocations process is integrated within the SAP system, key elements such as the RAB and final regulatory adjustments occur in off-system spreadsheets. LECG suggested that NERL should consider greater systems integration. NERL

has confirmed that it will consider this as part of the overall business case but changes will be made only where benefits outweigh the costs.

2.6. Transparency

The NERL systems are large and complex. Our initial understanding following early meetings with the NERL team, was that all substantive elements of the cost allocation process were managed through the central SAP system. In fact this was a misunderstanding. While the approach to all cost and revenue allocation is in principle the same the processes differ depending on the type of cost being allocated (this point is considered further in subsequent chapters). Our review work has had to expand to consider not only the central system but those parts of the process that happen outside of it.

Our initial information request included intra-group contracts and agreements and these were provided in the form of generic legal contracts. As the review progressed we established that a register of intra-group agreements had been made available to LECG. After obtaining this and attending a further meeting we understood how intra-group transactions were handled through the allocation process. In particular we wished to know whether any indirect costs had been capitalised via intra-group transactions (e.g. capitalisation of overheads). NERL confirmed that no overheads had been capitalised. The fact that this was not immediately apparent from the information we examined, leads us to conclude that the transparency of intra-group transactions could be improved. We recognise that the systems are complex and suggest, for any future review, there is value in spending time early in the process understanding how the system operates for all areas of cost and revenue.

In this context it is also important to understand that other significant processes such as time recording (which is utilised to allocate all staff costs to activities) also occur outside of the system. In this area we are dependent on the external audit and the fact that for the majority of the staff the time information is generated automatically from the work rosters. NERL has noted that time recording is an integral and central part of Activity Management and the SAP PS model.

Finally given our understanding of how the NIBS system operates as a two stage process with the allocation of capital costs occurring outside NIBS we asked about the capitalisation of overheads (e.g. whether any parent company allocations are capitalised). While all staff are employed by the parent company and seconded to NERL the costs, including any relating to capex projects, are not accounted for as inter-company charges and are shown as staff costs. No inter-company invoices are raised for intra-group charges because all companies reside in the same VAT group. Costs are coded to their appropriate activities and processed as SAP journal transactions.

2.7. Consistency

As indicated above NERL has emphasised that improvements have been made to the allocations system but these have not extended to fully integrating all processes. We have obtained the asset allocation spreadsheets so that we may test the process. These are linked spreadsheets with links

to other spreadsheets and data sources. This is a frequent and unavoidable problem when linked spreadsheets are shared and we have not requested these additional data sources because we have been able to undertake sufficient testing from the information provided. We have been able to test the allocation bases and have not found any significant errors. We initially found minor inconsistencies between the driver percentages in the BPS Service Line model and the asset allocation spreadsheet but these were due to the Service Line driver file relating to the latest year (2013/14) while the asset allocation spreadsheet related to 2012/13. In our opinion the risk of inconsistency in the allocations processes would be reduced if they were all integrated within NIBS.

We understand that NERL mitigates the risk of error by using staff who are familiar with the cost allocation system to undertake the off system elements of the process. While we agree that this approach reduces the risk we consider that risk remains and that this approach is somewhat inefficient. NERL has emphasised that the process occurs annually and that our review identified no errors. We understand it to be the case that the NERL does not wish to invest in the system further at this stage because the SAP BPS module is reaching the end of its life. This being the case we consider that it is appropriate to consider full integration of the system as part of the process of deciding how to address the end of life issue.

Consistency of allocation is considered further in each of the following chapters.

2.8. Recommendations

Given the risk of error/misallocation arising from the use of off system spreadsheets we consider that it is appropriate to consider full integration of the system as part of the process of deciding how to address the end of life issue for the SAP BPS module.

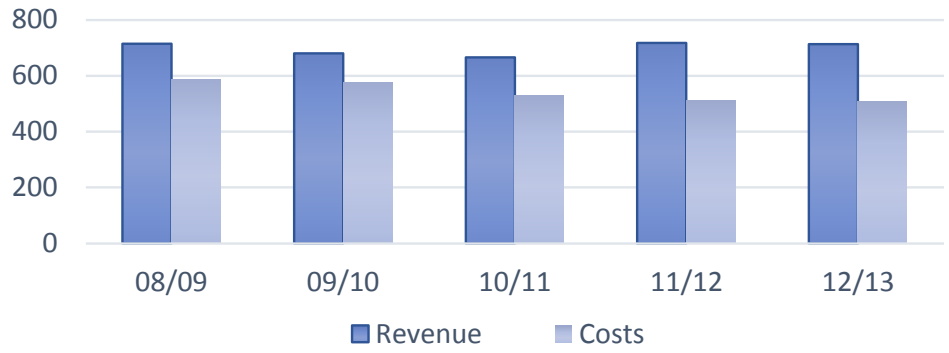
3. ALLOCATION OF REVENUE AND OPERATING COSTS

3.1. Introduction

As discussed in the previous chapter, NERL's costs and revenues are allocated between its different services lines via drivers. Each cost/revenue line is allocated using a single driver (chosen by NERL), which could be workstations, turnover, FTEs, etc. In a small number of cases NERL apply a blended driver, where the driver is formed based on two variables (e.g. IT user accounts and turnover).

The quantum of NERL's costs and revenues (as per NERL's management accounts[2]) over the last five financial years is shown below in Figure 3.1.

Figure 3.1: NERL revenue and costs (£m, 2012/13 real prices)



Source: NERL management accounts

The chart above shows that revenues are around £700m per annum (at constant prices). Costs have gradually fallen over the last five years, from roundly £600m in 2008/09 to approximately £500m in 2012/13.

In common with previous practice, all revenues in 2012/13 have been allocated directly to a single service line i.e. drivers are not used to split revenue between the various service lines. In contrast, of the £508m of costs incurred in 2012/13, only 30% is allocated to a single service line. The remaining 70% of costs are allocated to multiple service lines i.e. the chosen drivers for those individual costs allocate across multiple service lines.

3.2. Analysis of costs by service line 2013-19

The initial Business Plan for the period 2015-2019 does not specifically consider cost allocation. However, it does show changes in revenue by service line, which provides an indication of likely cost allocation.

[2] Only management accounts report costs and revenues at the detailed service line level.

Figure 3.2 business plan analysis

En Route Determined Cost

Plan 1 - En Route Calendar Year 2012 CPI Prices £m	2011 Actual	2012 Forecast	2013 Plan	2014 Plan	2015 Plan	2016 Plan	2017 Plan	2018 Plan	2019 Plan	CP3 Total	RP2 Total
Efficient Operating Costs											
Staff & Direct Underlying Costs	325	318	322	315	308	306	309	312	313	1,281	1,548
Cash Pension Contributions - Defined Benefit	91	90	84	78	64	63	61	60	57	342	305
Cash Pension Contributions - Defined Contribution	1	1	9	11	11	13	14	16	17	22	72
Exceptionals & Cost of Services to NSL	16	18	31	25	22	23	20	20	20	91	104
Operating Cost Contingency	-	1	5	7	6	6	6	6	6	13	31
Depreciation of the RAB	140	149	172	176	174	172	166	159	155	636	826
Regulatory Return (inc. tax charges)	81	79	78	77	72	67	63	60	57	315	320
Other Revenues	(95)	(94)	(94)	(94)	(92)	(92)	(90)	(88)	(90)	(377)	(453)
TOTAL	558	563	608	593	565	558	550	545	535	2,322	2,752

Oceanic Determined Cost

Plan 1 - Oceanic Calendar Year 2012 CPI Prices £m	2011 Actual	2012 Forecast	2013 Plan	2014 Plan	2015 Plan	2016 Plan	2017 Plan	2018 Plan	2019 Plan	CP3 Total	RP2 Total
Efficient Operating Costs											
Staff & Direct Underlying Costs	14	14	14	14	15	15	15	15	15	57	74
Cash Pension Contributions - Defined Benefit	4	4	4	3	3	3	3	3	2	14	13
Cash Pension Contributions - Defined Contribution	0	0	0	0	0	1	1	1	1	1	3
Exceptionals & Cost of Services to NSL	0	0	1	0	0	0	0	0	0	1	1
Operating Cost Contingency	-	-	0	0	0	0	0	0	0	0	1
Depreciation of the RAB	6	7	7	6	6	6	5	5	5	25	27
Regulatory Return (inc. tax charges)	3	3	2	2	2	3	2	2	2	10	12
Other Revenues	(1)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(2)	(2)
TOTAL	26	27	27	26	26	26	26	26	25	107	129

Other Revenue

Plan 1 & Plan 2 Total NERL Calendar Year 2012 CPI Prices £m	2011 Actual	2012 Forecast	2013 Plan	2014 Plan	2015 Plan	2016 Plan	2017 Plan	2018 Plan	2019 Plan	CP3 Total	RP2 Total
MoD Revenue	47	48	46	44	42	42	42	40	42	184	209
London Approach	10	11	10	11	11	12	12	12	12	43	58
North Sea Helicopters	8	9	8	9	9	9	9	9	9	34	44
Income from NSL	16	18	19	20	20	20	20	20	20	73	98
Other Revenue	13	10	11	11	11	10	9	8	8	45	45
Total NERL Revenue	95	95	94	94	93	92	91	89	90	379	455

Between 2013 and 2019:

- En Route (Eurocontrol) revenue is due to fall significantly (by c.12%).
- Oceanic revenue is also due to fall (by c.7%).
- Within other revenues, MoD income is forecast to fall (by c.9%).
- However, income from London Approach and NSL is set to rise (by c.20% and c.5%, respectively).

Overall, this does not suggest a significant shift in the proportion of revenues to each service line, and therefore CAA should expect the costs allocated to different service lines to remain fairly constant over the plan period. We are advised that the increase in revenues for London Approach between 2013 and 2019 mainly reflects the fact that NERL priced this service below the cap by £2.5m for the 2013/14 year. Income from NSL is also forecast to rise.

3.3. LECG approach and findings

LECG's analysis of drivers focused on the following areas:

- **Rationale for selection of driver**. Over 70% of NERL's 2008/09 costs are allocated either by workstations or turnover drivers, so LECG's analysis focused on this area. They

found drivers to be appropriate where causally linked i.e. to workstations. In the absence of a causally linked driver, NERL use a turnover driver to allocate common costs. LECG disagreed with this approach because it would create some circularity in setting revenues, and recommended changing turnover drivers for EPMU[3], but noted that that impact of their recommendations was "small", and that CAA's airport review concluded that "a change to EPMU was not required".[4] [5]

- **Supporting information to explain driver percentage split between service lines**. LECG observed that "support for driver input data is poor in places", which made it harder to verify the accuracy / robustness of driver files.[6] Upon reviewing a sample of driver files, LECG found a relatively high number of errors, the impact of which was a material difference in the costs allocated to London Approach. Recommendations were therefore to undertake a full review of driver files to ensure that "inputs are accurate and up to date" and to update/review drivers on "a regular (at least annual) basis".[7]
- **Process for managing / updating drivers over time**. LECG found that although NATS generally made annual updates to drivers applied to historical costs, NATS did not update drivers for future years. i.e. for planned allocations, NATS assumed a constant percentage split between service lines for all future years. LECG noted that it would be "more robust" to allow allocation percentages to be flexible/variable in future years. LECG also noted that the allocation percentages had not been changed between 2007/08 and 2008/09, and therefore the 2008/09 drivers may not have reflected the latest data. However, based on discussions with NERL, LECG noted that NERL is a relatively 'steady state' business and so the allocation percentages "would not change materially over time".[8] As stated above, LECG recommended that drivers should be reviewed/updated at least annually.
- **Application of drivers within the system**. LECG tested whether drivers were being correctly applied within the allocation system, and found some inconsistencies e.g. different drivers being applied to different instances of the same activity code.[9] However no specific recommendation seems to have been made in the LECG report in relation to this issue, but we note that this issue may fall under either (i) the 'full review of driver files', as discussed above, or (ii) LECG's further piece of work on NERL's updated workstation drivers.[10]

Our further analysis in relation to these issues is discussed later in this chapter. However in the following sub-section we first consider the changes to revenue and cost allocation over time.

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[3] Equi-proportional mark-up attempts to spread 'shared costs' to Service Lines in proportion to the direct costs each Service Line incurs.
[4] Supra. p.79-80.
[5] CAA, Airport price control review – CAA recommendations to the Competition Commission for Heathrow and Gatwick Airports, March 2007, p.80, paragraphs 6.58-6.60.
[6] Supra. p.78
[7] Supra. p.79
[8] Supra. p.69
[9] Supra. p.71-72.
[10] Supra. p.79

3.4. Revenue allocation by service line

Table 3.1 below shows a breakdown of NERL's total revenue by service line, including a separation of intercompany revenue from all other revenues.

Table 3.1: NERL revenue by service line (£m, 2012/13)

Revenue category	EC	LA	MoD	NSH	From NSL ICA	Other	OC	NERL total
Inter-company revenue	-	-	-	-	18.4	-	-	18.4
Other revenue	591.9	10.2	47.6	8.7	-	10.3	26.4	695.2
S/L total revenue	591.9	10.2	47.6	8.7	18.4	10.3	26.4	713.6
S/L as % of NERL total	83.0%	1.4%	6.7%	1.2%	2.6%	1.4%	3.7%	100%

Source: Data from BPS (used for NERL's management accounts)

Table 3.1 above shows that the largest source of revenue for NERL is from the Eurocontrol (EC) service line, at 83.0%. The next two largest service lines in terms of revenue are the Ministry of Defence contract (MoD) with 6.7%, and the Oceanic (OC) service line at 3.7%. Intercompany revenue from NSL makes up a relatively small proportion of revenue just 2.6%.[11]

3.5. Revenue allocation drivers

As stated in 3.1, each revenue item is allocated exclusively to a single service line, which is consistent with LECG's report.[12] i.e. There are no services which are provided jointly by two or more service lines.

Testing / Analysis

From a review of NERL's revenue we note that just over 75% is contained within a single activity line: The line is entitled: "Income – Eurocontrol, UK Airspace Eurocontrol", and unsurprisingly 100% is allocated to the Eurocontrol service line.[13] Therefore, although we consider some of the remaining drivers, this analysis is less critical given the dominance of Eurocontrol.

The top five revenue lines account for over 92% of revenue (£661.5m out of NERL's total 2012/13 revenue of £713.6m). If these lines are allocated in a robust manner it is likely to provide a relatively high level of confidence in the system. Table 3.2 below shows these top five revenue lines, along with their revenue amount and associated driver.

[11] Intercompany costs and revenues are discussed in more detail in Chapter 5.

[12] Supra. p.62.

[13] In addition to the 75% from this revenue line, EC also receives revenue from other activity lines, such that it receives 83% of NERL's total revenue.

Table 3.2: NERL top 5 revenue lines and chosen driver (£m, 2012/13)

Revenue line	Chosen Driver	EC	LA	MoD	NSH	From NSL ICA	Other	OC
Income – Eurocontrol; UK Airspace Eurocont	EC 100%	541.4						
Income – Eurocontrol; MOD Shared Facs	MoD 100%			51.0				
Shanwick Oceanic	OC 100%							25.8
CP3 Risk sharing rev	EC 100%	25.2						
CP3 inflation adjust	EC 100%	18.2						

Source: Data from NERL

It is self-evident that the top revenue line ('UK airspace Eurocontrol') should be allocated by the 'EC 100%' driver. Similarly, the 'Shanwick Oceanic' revenue line should clearly be allocated by the 'OC 100% driver'.

The fourth and fifth top revenue lines are adjustments to En Route revenue (from the CAA) based on variations in volumes and inflation (respectively) between plan and actuals. These revenue items are allowable variations to the Eurocontrol Service charges as set by the CAA in NERL's licence[14], and therefore (as confirmed with the CAA) the allocation of 100% of these revenues to the EC service line is appropriate.

We requested some further information on the second top revenue line (Income – Eurocontrol; MOD Shared Facs) as to whether it should be allocated to EC or MoD (or both). NATS has confirmed that "the description is that of the nominal account code", and that although the description is "misleading", it does indeed relate to MoD. As a simple update, we recommend that this description should be amended for future transparency.

Quality of process for inputting revenues

We have not analysed revenues down to a transaction level i.e. to check that there is a clear audit trail between invoices raised and the revenue lines in the system. We did however ask NERL to explain its process for inputting invoices into the system. NERL stated that:

> "There is a well-established (and audited) Eurocontrol Route Charges system that supplies the billing data to Eurocontrol's Central Route Charges Office (CRCO) who in turn bill airlines. The monies received from the airlines are then passed to NATS (and other member states). The debt recovery rate of the CRCO is around 99.5%. The other income streams are billed by NATS and the whole invoicing and

[14] CAA Air Traffic Services Licence for NATS (En Route) plc, January 2012, Condition 21: Control of Eurocontrol Service Charges, p.73. From discussions with NATS, we also understand that these variations are in accordance with the European Commission Charging regulation, which relates to the charges for en-route civil aircraft.

accounts receivable process is an integral part of the SAP system – the processes are also subject to internal and external audit as part of management and statutory audits."

From this we concluded that no further analysis was necessary given that this form part of NERL's routine audit processes.

3.6. Cost allocation by service line

Table 3.3 below provides a breakdown of NERL's total costs by service line, including a separation of intercompany costs from all other costs.

Table 3.3: NERL costs by service line (£m, 2012/13)

Revenue category	EC	LA	MoD	NSH	NERL to NSL	Other	OC	NERL total
Inter-company costs	-	-	-	-	14.3	-	-	-
Other costs	398.0	27.9	34.1	7.7	-	5.2	20.9	508.2
S/L total costs	398.0	27.9	34.1	7.7	14.3	5.2	20.9	508.2
S/L as % of NERL total	78.3%	5.5%	6.7%	1.5%	2.8%	1.0%	4.1%	100%

Source: Data from BPS (used for NERL's management accounts)

Table 3.3 above shows that the service line with the highest costs is Eurocontrol (EC) service line, at 78.3%. The next two largest service lines in terms of costs are the Ministry of Defence contract (MoD) with 6.7%, and the Oceanic (OC) service line. Intercompany revenue from NSL makes up a relatively small proportion of revenue (2.8%).

3.7. Cost allocation drivers

3.7.1. Introduction

Costs (including for staff) are allocated to the different service lines using particular cost drivers. As stated in 3.1, 70% of costs are allocated by drivers which spread the costs across multiple service lines, whilst the other 30% of costs are allocated exclusively to a single service line.

There are several types of drivers which allocate costs across a range of service lines:

- **Workstation drivers**: Costs are allocated based on the proportion of workstations relating to each service line, adjusted for the varying capabilities (complexities) of the workstations for different service lines.
- **Turnover drivers**: Costs are allocated based on the proportion of turnover for each service line.
- **Other drivers**: Includes turnover, staff numbers and blended drivers such as IT costs and management services. For the blended drivers a 2 step process is used to split by service line (e.g. for IT costs the driver is based on IT user accounts to create the split between NERL and NSL and then turnover is used to split between the NERL regulatory service lines The cost allocation process also incorporates adjustments to

workstation drivers to reflect the complexity/capability of the workstation. This process is further described in box 3.1.

Box 3.1: 'Capability weighting' adjustment to workstation driver allocations

One way to allocate costs would be to take the number of workstations relating to each service line and to split costs in this proportion. However, NERL considers that some workstations have greater capabilities because there are more systems configured on some workstation than others or they are used for mission critical operations / safety tasks. As such some workstations are supported by a greater part of the NATS technical infrastructure and so require a greater degree of engineering support, and therefore merit a greater share of costs.

Cost allocation between services lines for workstation drivers is based on a two-step process:

1. Determine the proportion of workstations relevant to each service line.
2. Apply a capability weighting, by adjusting these proportions (from step 1) according to the varying capabilities/criticalities of different workstations. This generates an adjusted percentage split by service line, which is used to allocate costs.

The weighting process operates as follows. Each workstation is assessed for its capabilities, and is assigned a number of points based on the scoring matrix set out below. A low score indicates a low capability feature (e.g. support functions), whereas highly complex or critical features have a high score (up to 5). e.g. If a workstation has power but no other features it would have a score of 1. However, adding IFACTS (i.e. the ability to predict a plane's flight path up to 18 minutes in advance) would increase the workstation's score by a further 5.

Value criteria	ATCO Utilisation	ATSA/Support staff Utilisation	Power Y/N	Auto-Triangulation Display Y/N	EFD/EDDUS Y/N	Ifacts Y/N	TOMS Y/N	Support information screens Y/N
Scoring	5	4	1	4	4	5	2	2
Value criteria	BURT/AAS Y/N	Multilat Y/N	OPM input required Y/N	Radar Service Y/N	A/G Channels Y/N	G/G Lines Y/N	Flight data present Y/N	
Scoring	5	5	1	5	5	5	4	

We note that there is a consistent set of objective criteria for this scoring system, as illustrated below. Workstation features are assessed against these criteria on an annual basis by 'operational experts' and the overall scores are assessed by an asset manager.

Value criteria scoring	Description
5	The Asset, System or Equipment is utilised for critical mission related actions by Air Traffic Control Officers. High Safety Criticality and Complexity
4	The Asset, System or Equipment is utilised to provide immediate support information for ATCO critical decision making. High Safety Criticality and Complexity
3	The Asset, System or equipment is utilised by ATSA/support staff to supervise/plan and strategically guide ATC staff. Medium Safety, high complexity
2	The Asset, System or Equipment is required in the operational area for process or ATM support functions. Low safety.
1	The Asset, System or Equipment is required to allow the Workstation to operate (minimum fuctionality).

Once the capabilities of workstations across all different service lines have been assessed, the service lines with 'above average' work station capabilities will receive an increase in cost allocation, whilst the service lines with 'below average' workstations will be allocated fewer costs. This is all calculated in a discrete workstation driver spreadsheet model which is separate to the NIBS system.

Overall, our view is that this process is reasonably objective, as it is realistic to assume that workstations which are more critical / complex to require a higher degree of engineering support. From discussions with NERL we understand that this is a considerable improvement on how workstation drivers were previously calculated – which was more judgemental. Our only comment is that it would be useful to provide greater rationale for the 1-to-5 scale. For example, our understanding is that this implies that a workstation with a total capability score of 20 requires five times more engineering support than a workstation with a score of 4. This may well be approximately true, but we are unsure as to whether NATS has considered the exact implication of the scoring matrix. For example, the outcome of the complexity weighting process would be different if the scale was 1-to-2 or 1-to-10. Therefore we recommend that NERL considers the costs of different capabilities, at least at a high level, to ensure that the complexity weighting is as objective as possible.

3.7.2. Administration of drivers

As discussed in Chapter 3, drivers are applied as percentages to costs aggregated at activity code level. The percentages are determined by the definition of the particular driver e.g. a driver based on EC and MoD turnover will split costs based on the relative turnover in those two service lines.

Following LECG's findings and recommendations NATS undertook a comprehensive review of its workstation drivers in 2009. NATS indicates that this included the development of a more robust process for maintaining drivers, and involved engagement with key experts.[15]

Following this review, NATS workstation drivers are maintained in the following way:

- NATS has an official procedure (NMS Procedure NP040118) which sets out the high level accountabilities and process for cost driver maintenance.
- Asset Management acts as the driver owner for the workstation drivers, while Central Finance holds the controlled copy of the driver data model.
- The NMS procedure "envisages" an annual review of drivers involving key stakeholders, which ties in with the business planning process.
- Finance managers act as the focal point for their particular Centre (e.g. Swanwick or Prestwick) and arrange for expert resource to be available for ongoing update and review.
- Service line managers review the impact of any driver changes on their service line and agree any changes collectively.[16]

LECG subsequently undertook an assessment of NERL's updated workstation drivers and process, and concluded that "NERL's updated workstation based drivers are fit for purpose".[17]

[15] NATS presentation, Cost allocation review meeting with CEPA, 19th July 2013, 4, slide 6.
[16] Ibid. slide 19
[17] Greg Harman (LECG) to Robert Toal (CAA) – 21st January 2010

Based on discussions with NERL, it has been confirmed that the above process is followed both as part of the annual business planning process and at other times when changes occur to operational workstation numbers / configuration. We have also seen email exchanges between Central Finance and Asset Management which provides evidence that this annual review process is being undertaken on a collaborative basis.

Given that LECG's report (and subsequent assessment) placed a strong focus on updating the workstation drivers, we were concerned that the same process may not have been implemented to the same extent for the other (non-workstation) drivers. Having presented this query to NERL, they stated that "the same process is followed in that we consult the driver owner at least annually to provide an update of the driver data".

Testing

We have undertaken testing to analyse whether LECG's recommendations have been addressed. In particular:

- **Test 1 - Driver percentage split between service lines**: Checking that the service line percentage split in the driver is correct. For example, do turnover drivers reconcile with turnover from the management accounts, do workstation drivers reconcile with the number of workstations (adjusted for the 'capability weighting'), etc.
- **Test 2 - Application of drivers within the allocation system**: Checking that the driver percentages are actually feeding through correctly into the cost allocation system.
- **Test 3 - Workstation driver adjustments**: Checking that adjustments to the workstation drivers (to reflect variations in workstation capability/criticality weighting) are well-justified.
- **Test 4 - Driver support files**: Checking that driver support files exist and contain clear evidence / assumptions to support the driver service line percentage allocation.

3.8. Findings

Our detailed analysis is set out in Annex 3 to this report. Summarised findings from testing are as follows:

Test/ref	Title	Finding
Para 4.6	Capability/complexity weightings	It would be useful to provide greater rationale for the 1-to-5 scale used to assign complexity ratings. We recommend that NERL considers the relative costs of different capabilities, at least at a high level, to ensure that the complexity weighting is as objective as possible.

Test/ref	Title	Finding
Test 1	(A) Turnover drivers – is the applied % split by service line consistent with turnover in management accounts. (B) Workstation drivers – tested consistency of the offline driver model with the allocation system.	We noted a number of variances which NERL explain arise out of the use of forecast turnover data in advance of actuals being available. Although NERL does not consider it useful to update turnover drivers for the purpose of the management accounts, we recommend that this is done (subject to it being a manageable task) to ensure that statutory and regulatory accounts are consistent. No variances noted
Test 2	Application of drivers – replicated the allocation process	Some very minor variations were noted but testing indicates that drivers are being accurately applied.
Test 3	Impact of adjustments for workstation complexity/capability	The process moves cost away from Oceanic and towards LA and MoD and this appears rational given the relative complexity of the service.
Test 4	Review of driver support files	Overall testing demonstrates a significant improvement against LECG findings but with some room for further improvement e.g. clearer rationale for choice of a driver. Also note that only some drivers have future forecasts. NERL cite difficulty in creating forecasts for all drivers ((i.e. "not practical"). However, we consider that it is possible to include some simple forecasts.

3.9. Summary

Revenue is allocated 100% to service lines via a single driver and has therefore not been the focus of our review. We note however that one of the drivers we reviewed (Income – Eurocontrol; MOD Shared Facs) was not clearly titled as it allocates 100% of revenue to the MoD service (i.e. it does not allocate any revenue to the EC service line). Therefore we recommend that this nominal account code title should be updated.

In Contrast 70% of costs are split between service lines. The most common drivers for cost are the workstation drivers accounting for 43%, 16% use turnover drivers and for 11% of costs an

'other' driver is applied. We have reviewed driver percentages, driver maintenance, capability adjustments and consistency over time and have found no major concerns although a number of minor recommendations emerge from detailed testing.

3.10. Consistency

We have considered the degree to which the top 10 drivers change overtime and have concluded that there is a high degree of consistency although this was not immediately straightforward to establish given the changes in NATS operational structure and to the system which supports service line allocation. Our detailed testing suggests that the processes for allocation of costs and revenues are operating as described by NERL and that the process of allocating costs to service lines is robust.

LECG also recommended that turnover drivers be replaced with EPMU. However CAA concluded in respect of its Airports review that this was not necessary and NERL has not implemented this recommendation. Given NATS and CAA's have had similar views on implementation in the past we have not reconsidered the impact that such a change would have although we note that it could be material for some of the smaller service lines. We do however agree with LECG that there is some circularity in the use of turnover for cost allocation. We also consider that materiality should not just be considered at an overall level because EC is so dominant in the cost base. Materiality for other services lines will be at a very much lower level of cost. We therefore tend to the view that EPMU would be preferable to turnover given its use by other regulators, because it removes circularity and arguably provides a more accurate allocation of costs. Some concern has been expressed about the costs versus benefits of such a change and we have not undertaken this analysis. Were this to be calculated we would recommend that it take into account the variation in materiality levels between EC and other service lines

3.11. Transparency

In relation to operating costs and revenues, which form by far the largest proportion of the NERL cost base, there is a good level of transparency and we have been able to replicate the operation of the system. Work recommended by LECG to improve the usability of the driver support file has in the main been successful but we consider that more rationale could be provided to aid transparency

3.12. Recommendations

We recommend that:

- NERL undertakes some additional high level analysis into the costs of different workstation capabilities/ complexities to ensure that the scoring matrix is formed in as objective a fashion as possible.
- NERL develops a process for updating the turnover drivers used for cost allocation in BPS, subject to it being a manageable task, to ensure that statutory and regulatory accounts are consistent.
- As part of the process of next updating driver support files greater rationale/explanation for the driver should be provided where limited explanation is currently provided.

- For driver variables which are currently considered constant over time (as forecasts are "not practical"), consider whether simplifying assumptions could be made to ensure that forecasts for all drivers are variable over time.
- On balance we that further consideration should be given to replacing turnover with EPMU drivers.
- NERL rename the 'Turnover – UKATS' driver (BIN25) as 'UKATS - External'.
- NERL rename the "Income – Eurocontrol; MOD Shared Facs" revenue nominal account code.

4. ALLOCATION OF CAPEX COSTS

4.1. Introduction

In this chapter we consider NERL's approach to the allocation of costs relating to capital expenditure, changes made since the last allocations review and our findings following our analysis. A separate firm of consultants has been appointed to review capex and therefore the scope of our review is confined to the allocations procedures.

In the table below we set out the ratio of NERL's historical capital expenditure costs to operating costs.

Table 4.1: NERL's historic ratio of capex to opex

Ratio of capex to opex	12/13	11/12	10/11	09/10	08/09	Average
UKATS	.35	.37	.36	.40	.36	.37
Oceanic	.16	.14	.18	.18	.18	.17
Combined	.34	.36	.35	.39	.35	.36

Source: Derived from capex additions and opex in NERL regulatory accounts

The table shows a degree of consistency with higher levels of capex in the first two years, falling in the final three years offset in part by lesser reductions in opex in the final three years.

The following tables show the forecast ratio of capex to opex. Table 4.2 shows the ratios for Plan 1 described by NERL as a Service Led Plan at Lower Price. Table 4.3 shows the ratios Plan 2 described by NERL as a Price Led Plan with more aggressive cost reduction and higher risk.

Table 4.2: NERL's forecast ratio of capex to opex (Plan 1 of RP2 Business Plan)

Ratio of capex to opex	13/14	14/15	15/16	16/17	17/18	18/19	Average
UKATS	.36	.42	.41	.37	.35	.34	.37
Oceanic	.57	.43	.33	.27	.20	.13	.32
Combined	.36	.42	.41	.37	.34	.33	.36

Source: Derived from capex additions and opex in NERL RP2 Business Plan (Plan 1)

Table 4.3: NERL's forecast ratio of capex to opex (Plan 2 of RP2 Business Plan)

Ratio of capex to opex	13/14	14/15	15/16	16/17	17/18	18/19	Average
UKATS	.36	.41	.41	.35	.32	.30	.35
Oceanic	.57	.43	.33	.27	.20	.13	.32
Combined	.37	.41	.41	.35	.31	.29	.35

Source: Derived from capex additions and opex in NERL RP2 Business Plan (Plan 2)

While there is a degree of consistency with the historic ratios for UKATS with the ratio falling back as capex falls towards the end of RP2, the planned ratio is markedly different for Oceanic.

NERL has explained that this is due to significant levels of capital investment during early RP2 including the upgrade of the Oceanic Flight Data Processing systems (replacing SAATS). After

this investment is completed, the Oceanic opex / capex ratio falls back and shows relatively low capex, compared to opex levels. NERL explains that the historically low ratio, relative to En Route reflects the fact that the Oceanic service is comparably less complex than the En Route / Terminal service.

4.2. LECG approach and findings

The issues relating to Capex raised by LECG four years ago were as follows:

- The process of allocation differs and is more judgemental than that applied elsewhere. Capex is allocated on the basis of engineering judgement. This process differs from that applied to capital depreciation. Impact is small however as most projects are charged to a single service line. LECG recommended that the process of allocating capex should be made consistent with treatment of depreciation.
- New accounting rules mean that borrowing costs are to be capitalised. If interest also capitalised then there would be a double count. At the time NERL confirmed it would not capitalise interest for Regulatory purposes.

4.3. Analysis and Testing

As explained in Chapter 2 fixed assets are accounted for within SAP through the assets module. Capital projects are established within SAP at activity level and costs are charged prior to further allocation to these capital activities. Once assets are in use (commissioning of assets under construction) the assets module calculates depreciation charges which are allocated to service lines through the same process utilised for all operating costs, namely the BPS Service Line Model. However while the same allocation drivers are utilised for capital asset allocations this process is not integrated into the NIBS system and is achieved via a standalone spreadsheet developed for this purpose. This spreadsheet is used to allocate the following in year movements by service line:

- additions to tangible fixed assets;
- proceeds of the disposal of tangible fixed assets; and,
- grants and contributions to tangible fixed assets.

The output from this standalone spreadsheet is an input to the regulatory accounts spreadsheets where any final adjustments are made and from which the RAB information is derived.

Our testing has focused on the asset allocation spreadsheet for NERL (NAT2) for 2012/13. We have confirmed the consistency of the drivers and allocation percentages for the following proportions of asset additions:

- For assets under construction (AuC) that were completed and capitalised in 2012/13, £45.1m for UKATS, representing 56.7% of total AuC additions, and £0.3m for Oceanic, representing 45.2% of total AuC additions.
- For other additions in year, £15.2m for UKATS, representing 39.9% of additions, and £1.4m for Oceanic, representing 84.4% of additions.

Our work has confirmed that, for this level of testing, the same drivers and percentages were applied within the BPS Service Line Model and the asset allocation spreadsheet.

External capex charges are coded direct to the project activities. Capitalised staff costs are derived from time sheet recording to reallocate staff costs (charged at cost centre level) to activities based on the hours charged at standard hourly charge out rates. A further process charges back to activities at year end any labour under/over recovery following charges being made at standard rates. This is effectively the first stage of cost allocation and precedes the spreadsheet based asset allocation process described above.

Given our understanding of how the NIBS system operates as a two stage process with the allocation of capital costs occurring outside NIBS, we asked about the capitalisation of overheads (e.g. whether any parent company allocations are capitalised). While all staff are employed by the parent company and seconded to NERL the costs, including any relating to capex projects, are not accounted for as intercompany charges and are shown as staff costs. No inter-company invoices are raised for intra-group charges which are instead coded clerically to their appropriate activities and processed as SAP journal transactions. NERL confirmed that no overhead costs have been capitalised and emphasised that asset additions have been subject to external audit.

There have been some instances in the past where higher than previously planned utilisation of internal resources on capital projects has led to out-performance against opex allowances. NERL confirms that for all capital projects it assesses the appropriate level of internal versus external resource to ensure that the efficient operation of the air traffic management system is not compromised. Some utilise mainly internal resource (e.g. airspace changes), whilst others will have a much higher proportion of external expenditure (e.g. equipment renewals). NERL states that the ratio of internal to external resource has been reasonably consistent year on year at 30:70 and provided the following table to illustrate this:

Table 4.4: NERL's ratio of internal to external resource costs – actual (2012/13 constant prices)

	09/10 £m	09/10 %	10/11 £m	10/11 %	11/12 £m	11/12 %	12/13 £m	12/13 %
Internal (NATS/ contract)	46.4	30%	38.2	29%	36.6	28%	37.8	32%
External	108.6	70%	92.1	71%	93.6	72%	81.6	68%
Total	155.0	100%	130.3	100%	130.2	100%	119.4	100%

Source: NERL response to Question 14 updated to constant prices

The table below shows NERL's capitalised staff costs including contract staff over the last five years. NERL comments that the reduction in capitalised contract labour reflects its policy of reducing the number of contractors.

Table 4.5: NERL's summary of own (and contract) labour that has been capitalised (2012/13 constant prices)

	08/09 £m	09/10 £m	10/11 £m	11/12 £m	12/13 £m
Capitalised Labour per CP3 plan	N/A	N/A	N/A	39.4	38.8
Actual capitalised labour:					
NERL own staff	43.3	42.3	35.3	34.8	37.5
Contract labour	8.2	4.2	2.9	1.8	0.3
Total	51.5	46.5	38.2	36.6	37.8
Underspend actual against CP3 plan	N/A	N/A	N/A	-2.8	-1.0

Source: NERL response to Question 14 updated to constant prices

4.4. Capex outturn against planned allowance

The table below sets out the agreed CP3 capital plan by Strategic Investment Plan (SIP) category by year in outturn prices.

Table 4.6: Planned Capex by SIP category for CP3[18]

Programme	11/12 £m	12/13 £m	13/14 £m	14/15 £m	Total CP3 £m
Airspace Development	6	6	4	5	21
Centre Systems Software Devt	26	24	23	17	90
CNS Infrastructure	28	25	21	14	88
CO2 and Fuel Saving	0	0	2	12	14
Development of SAATS	1	3	1	1	5
Facilities Management	12	9	4	4	28
INCW at TC & PC	0	3	13	20	36
iTEC FDP	42	49	42	15	148
NCW at all NERL Centres	0	2	14	17	33
Risk and Contingency	2	5	7	11	25
RSS	18	10	2	0	30
SNets and Airspace Efficiency	4	11	14	16	45
Grand Total	**138**	**148**	**147**	**131**	**563**

Source NERL response to Question 14 updated to constant prices

The table below sets out actual capital expenditure, CP3 plan and the total variance for the first two years of CP3.

[18] Price base to be confirmed

Table 4.7 Actual capital expenditure compared with planned expenditure

Programme	Actual 11/12 £m	CP3 Plan 11/12 £m	Actual 12/13 £m	CP3 Plan 12/13 £m	Variance Both Years £m
Airspace Development	3.9	5.8	5.1	5.6	(2.4)
Centre Systems Software Devt	39.7	26.4	37.8	24.5	26.6
CNS Infrastructure	22.8	27.6	25.6	25.2	(4.4)
CO2 and Fuel Saving		-	0.0	-	0.0
Development of SAATS	1.7	1.2	1.3	2.6	(0.9)
Facilities Management	6.1	11.7	5.6	8.7	(8.8)
INCW at TC & PC		-		3.1	(3.1)
iTEC FDP	30.5	41.7	29.8	48.8	(30.2)
Military	0.6	-	5.3	-	5.9
NCW at all NERL Centres		-		2.5	(2.5)
Risk and Contingency		2.0		5.4	(7.4)
RSS	17.1	17.6	6.0	10.3	(4.8)
SNets and Airspace Efficiency	3.7	4.2	2.9	11.0	(8.6)
Grand Total	**126.0**	**138.3**	**119.4**	**147.6**	**(40.6)**

Source NERL response to Question 14 updated to constant prices

4.5. Summary

External capex charges are coded direct to the project activities. Capitalised staff costs are derived from time sheet recording to reallocate staff costs to activities (capital projects) based on the hours charged at standard hourly charge out rates. A further process charges back to activities at year end any labour under/over recovery following charges being made at standard rates. This is effectively the first stage of cost allocation and precedes the spreadsheet based asset allocation process described below.

Fixed assets are accounted for within SAP through the assets module. Capital projects are established within SAP at activity level and costs are charged prior to further allocation to these capital activities. The SAP module derives depreciation charges and profits/ losses on disposal of assets which are allocated to service lines through the same process utilised for all operating costs, namely the BPS Service Line Model. The off system RAB spreadsheet is utilised to restate calculated depreciation charges in line with the Regulatory Accounting Guidelines. Our testing has indicated that the same service line drivers have been utilised within the BPS Service Line Model and the asset allocation spreadsheet. We have found no evidence of a mismatch between assets and depreciation.

The same allocation drivers are utilised for capital asset allocations via a standalone spreadsheet developed for this purpose. This spreadsheet is used to allocate the following in year movements by service line:

- additions to tangible fixed assets;
- proceeds of the disposal of tangible fixed assets; and,

- grants and contributions to tangible fixed assets.

The output from this standalone spreadsheet is an input to the regulatory accounts spreadsheets where any final adjustments are made and from which the RAB information is derived.

4.6. Consistency

Allocation is undertaken off system utilising allocation tables that must be separately maintained. As indicated in Chapter 1 we consider that this increases the risk of inconsistency. However, our review, which has focused on 2012/13, indicates that the basis of allocation has been consistent between the BPS Service Line Model and the asset allocations spreadsheet.

4.7. Transparency

As indicated in earlier chapters of this report our initial understanding was that all substantive elements of the cost allocation process were managed through the central SAP system. On further enquiry we developed our understanding that while the approach to all cost and revenue allocation is in principle the same, the processes differ depending on the type of cost being allocated; this is the case for capex.

4.8. Recommendations

We understand from NERL that the capex process has changed from that reviewed by LECG so that it is now consistent with the depreciation basis and is no longer dependent on judgement. However the process is dependent on ensuring that any changes in the NIBS driver tables are reflected in the asset allocation spreadsheets. LECG also noted that new accounting rules meant that borrowing costs are to be capitalised. If interest was also capitalised then there would be a double recovery. At the time NERL confirmed it would not capitalise interest. Our understanding is that NERL did not capitalise borrowing costs for regulatory purposes and this position has continued since the LECG review. This being the case NERL has met the specific LECG recommendations.

However LECG also indicated a view that greater degree of transparency would be achieved by extending NIBs to incorporate capex. We agree with this view. Consistent with our recommendation in Chapter 2 we consider that the capex allocation process should be brought within the NIBS system. NERL has stated it will consider this when the time is right but will not change the system to accommodate it unless the benefits outweigh the costs.

5. OPERATION OF INTERCOMPANY AGREEMENTS

5.1. Introduction

The purpose of this chapter is to review the number, scale and nature of intercompany agreements between NATS' different legal entities, and in particular to consider whether costs/revenues are being charged in a way that ensures a proportionate and fair allocation.

As illustrated earlier in Figure 1.1, there are several different legal entities within NATS:

- NATS group
- NERL
- NSL
- NATSNav[19]

There is significant trading between these entities although in relation to overall turnover intergroup activity is small (excluding staffing).

To provide some context for this chapter we note that there are three specific types of intercompany agreements:

- Management Service Agreements (MSAs), which describe the contractual arrangements between different statutory entities for common services provided by NATS or NERL. Examples of services are IT, human resources, board/executive functions, business management, communications, environmental initiatives, finance, legal services, facilities management, health and safety, insurance, etc. Services under MSAs are provided at cost i.e. without a mark-up.
- Intercompany Agreements (ICAs), which are the contractual arrangements between two individual entities covering a service that is provided directly from one entity to another. ICAs cover services which could have been provided externally by a 3rd party (e.g. 'beneficial' services), and therefore are treated as commercial agreements. From discussion with NATS we understand that ICAs are the "legal agreements that govern arrangements between the parties", and that individual transactions are then agreed within this legal framework. Services under ICAs include a mark-up
- Secondment agreements, which govern the secondment of staff from NATS to both NERL and NSL.[20] Although NATS has contracts to govern the secondment agreements, we note that it does not treat them as intercompany agreements (in the same way as MSAs and ICAs) because NERL includes their costs under staff costs (not intercompany

[19] NERL were previously given consent to acquire NATSNav in May 2010 (CAA report). However, this did not transpire and NATSNav remains a 100% subsidiary of NSL NATSNav's 2010 financial accounts state that the NATS group provided NATSNav with a £824k loan facility.

[20] All staff are employed by NATS, and are then seconded to NERL and NSL.

costs). NATS' Inter-Company Trading & Pricing Policy confirms that NATS Ltd provide staff to NERL and NSL at cost, with no margin.[21]

5.2. Network of agreements

In total there are nine intercompany framework agreements between the different entities, including three MSAs, four ICAs and two secondment agreements. MSAs exist between NATS, NERL and NSL. This typically involves the provision of head-office type functions, as discussed in Chapter 2. NATS and NERL are the main providers of these services, while NSL is a recipient. (although we are advised that more recently, NSL has become a provider of two MSA services to NERL) NERL also receives services from NATS.

ICAs exist between NERL, NSL and NATSNav:[22]

- NERL provides services to NSL for some of its operational needs and in relation to its external business requirements. This includes services such as radar data used in the delivery of the airport traffic services and testing of local airport based air navigation equipment.
- NSL provides support functions to NERL (e.g. some en route ATC functions where it is economically beneficial to combine the airport approach and en route services, NSH operations, Aeronautical information services, etc.).
- NATSNAV was set up to be the NATS service provider engaged with the provision of EGNOS and GSA satellite services for the air traffic industry in conjunction with a number of other European ANSPs.

In addition, there may be instances where surplus resources are available on a short term basis in one entity that could be used to fulfil a contract or project being undertaken by another entity. In this case, the NATS bid committee would review resource requirements and, if available without an adverse effect on its own operation, requests would be put forward to utilise staff from the other entity. Any cross-entity utilisation of staff is priced on an arm's-length basis, as per the ICA requirements.

From discussion with NATS we understand that the ICAs (i.e. the legal agreements) are subject to approval by the company's lenders and Board. NATS advise that ICA schedules (the pricing associated with the agreements) are approved in line with governance and inter-company pricing policies. Where more complex international transactions are involved, NATS seeks further advice on transfer pricing arrangements from advisors and consultants. We understand that NATS tax committee provides policy decisions in connection with tax treatment.

As indicated above there are two secondment agreements, under which NATS provides staff to both NERL and NSL. We requested information from NATS on the rationale for all staff being employed by NATS Ltd (and then seconded to NERL and NSL). NATS explained that these

[21] NMS: NATS-Wide Inter-Company Trading & Pricing Policy, Issue 5, January 2013, p.3.

[22] In addition, we note that there is an 'intercompany trading agreement' document between NATS and NERL. However, NATS has stated that there is no ICA between NATS and NERL, and so it would be useful to identify what this document is for. [it exists but has not been initiated]

arrangements are historical arising out of the PPP transaction in 2001 and bound into the financing and ring-fencing arrangements that were put in place at that time and which are still in force today. NATS stated that "NATS Ltd is not a trading company and therefore for accounting purposes and transparency staff are allocated to either NERL or NSL" and "this enables SAP HR processes to be used more effectively within each company."

5.3. LECG findings and recommendations

LECG's recommendations for intercompany agreements relate only to the NATS definition of MSAs and ICAs i.e. they exclude secondment agreements. Their findings are discussed below.

5.3.1. MSAs

LECG's report consisted of the following analysis in relation to MSAs:

- **Reconciliation between the MSA agreements and NERL's P&L accounts by service line**. There was an audit trail that allowed revenues/costs to be traced for NERL MSAs. There were some discrepancies for NATS' MSAs (between the agreement and the actual transactions), but LECG accepted NERL's explanation for these variations.
- **Consideration of the appropriateness of charging MSA services at cost**. LECG concluded that arguments could be made both for and against a mark-up on costs, although there is regulatory precedent to support the exclusion of mark-ups. Overall LECG considered that excluding a mark-up on MSA costs is "appropriate".[23]
- **Consideration of the appropriateness of drivers used to allocate MSA costs**. The top four drivers allocate roughly three-quarters of MSA costs. LECG found some room for improvement in the MSA cost allocation drivers:
    - Firstly, NERL's use of blended drivers lacks transparency and a causally related driver would be preferable (e.g. disaggregating insurance costs so that a single driver could be applied). Specifically for health and safety costs, LECG recommended that the split in FTEs (between NERL and NSL) was the most appropriate driver.
    - Secondly, in the case of common costs without an obvious causally linked driver, NERL's use of turnover drivers creates some circularity which could bias allocation, and allocating on an EPMU[24] basis would be "the most equitable alternative basis" for allocating MSA costs.[25]

[23] Supra. p.42

[24] Equi-Proportionate Mark-Up, where common costs are allocated between entities in proportion to their share of directly attributable costs.

[25] Supra. p.49

- **Analysis of the impact of applying alternative drivers**. LECG considered that the impact of implementing their recommended changes to MSA cost drivers would however be "immaterial".[26]

5.3.2. ICAs

LECG's report included the following analysis in relation to ICAs:

- **How ICA charges are set**. 'Cost plus a mark-up' is the primary method for setting the majority of ICA charges, which is "consistent with the RAGs" where market testing is not feasible.[27] However, LECG concluded that there is strong regulatory precedent to support the exclusion of mark-ups. In addition, the current system is established through a number of reviews (although LECG did not question this policy as they considered to be a small area of cost).
- **Consideration of the level of charges**.[28] Comparing the level of mark-up in NERL's ICA policy to BAA's mark-up policy (7.5%), NERL's mark-up "on the grounds of materiality appears broadly acceptable".[29] This conclusion was made in the light of NERL's policy to not include any mark-up on MSA costs.
- **Tracing a sample of agreements through to the profit and loss account**. ICA charges could be traced through to the P&L but they did not reconcile precisely to the agreements. This was because some changes had been made e.g. a change was made to the rate of RPI in the agreement but not applied to the charge. However, across all of the ICA agreements and charges assessed, the total variation between the two was 1.9%, which is noteworthy but relatively minor.

We note that LECG did not make any recommendations for changes to NERL's ICAs in any of the areas discussed above.

5.4. Introduction to terminology

In the following subs we consider the impacts of these different agreements in terms of revenues and charges (or costs). For clarity it is useful to define what NATS mean by 'revenues' and 'charges' (or costs) in relation to intercompany agreements:

- **Revenue**: Where one entity provides a service to another, and therefore receives revenue from that other entity for providing the service.
- **Charges (costs)**: Where one entity receives a service from another, and therefore makes a payment to that other entity in exchange for their service.

Revenues and charges (costs) are discussed in the following sub-section.

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[26] Supra. p.49

[27] Supra. p.54.

[28] Given that intercompany agreements are bilateral (i.e. between entities rather than within entities), cost allocation is not an issue.

[29] Supra. p.55.

5.4.1. Revenue

NERL has provided data on the revenues received from ICAs and MSAs over the last four years, as shown in Table 5.1 below.

Table 5.1: NERL revenue from intercompany agreements (£m, 2012/13 constant prices)

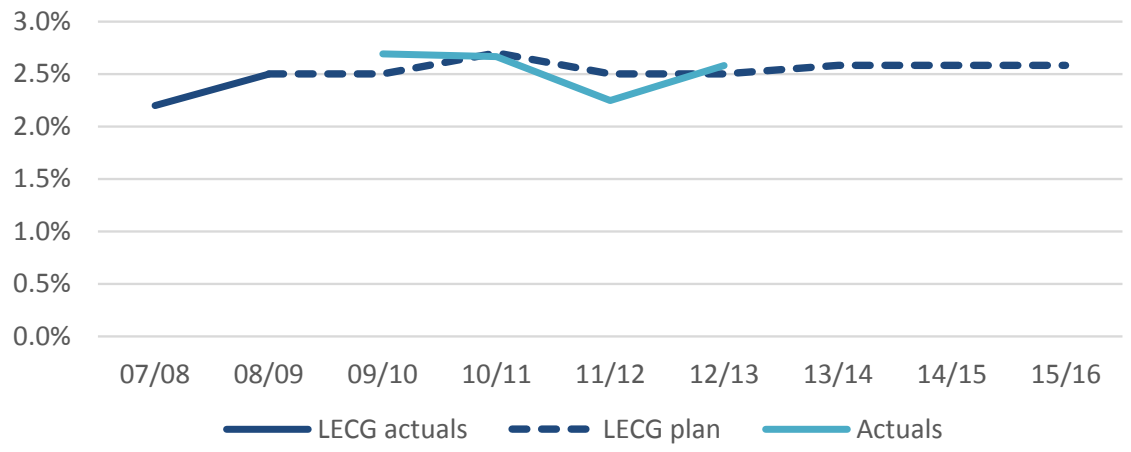
NERL Revenue	2009/10	2010/11	2011/12	2012/13
ICAs	13.3	13.0	10.8	12.3
MSAs	5.0	4.8	5.4	6.1
Total (ICAs + MSAs)	18.3	17.7	16.1	18.4
NERL total revenue	680.1	665.2	717.1	713.6
ICAs and MSAs as % of NERL total	2.7%	2.7%	2.2%	2.6%

Source: Data from NERL

Overall, revenues from ICAs and MSAs are a relatively small proportion of NERL's total revenues, at less than 3%. For the most recent financial year (2012/13), revenue from ICAs was about twice as large as revenue from MSAs.

LECG's 2009 report undertook a similar analysis, which considered data back to 2007/08, and included revenue forecasts from 2009/10 onwards. This trend is shown below in Figure 5.1 and is compared to the most recent actuals (from Table 5.1 above).

Figure 5.1: NERL intercompany revenue (MSAs and ICAs) as percentage of total NERL income



Source: LECG report (2009), data from NERL

Figure 5.1 above shows that intercompany revenue has been fairly consistent over time, comfortably in the range of 2%-3%. Furthermore, the revenue forecasts included in LECG's 2009 report have been reasonably accurate. Taken together, these observations suggest that NERL's intercompany revenues are predictable over time.

The fact that intercompany revenues are both small and relatively consistent over time suggests that misallocation of revenue is unlikely to have a material impact. The exception to this would be if NATS' other entities were consistently underpaying NERL for its services. However, as

discussed further below, NERL states that the gross contribution on its intra-group services are strongly and consistently positive (in the range 43%-50% for the last four financial years).

5.4.2. Charges (costs)

NERL has provided data on its intercompany charges (from NATS and NSL) over the last five years, as shown in Table 5.2 below.

Table 5.2: NERL charges (costs) from intercompany agreements (£m, 2012/13 constant prices)

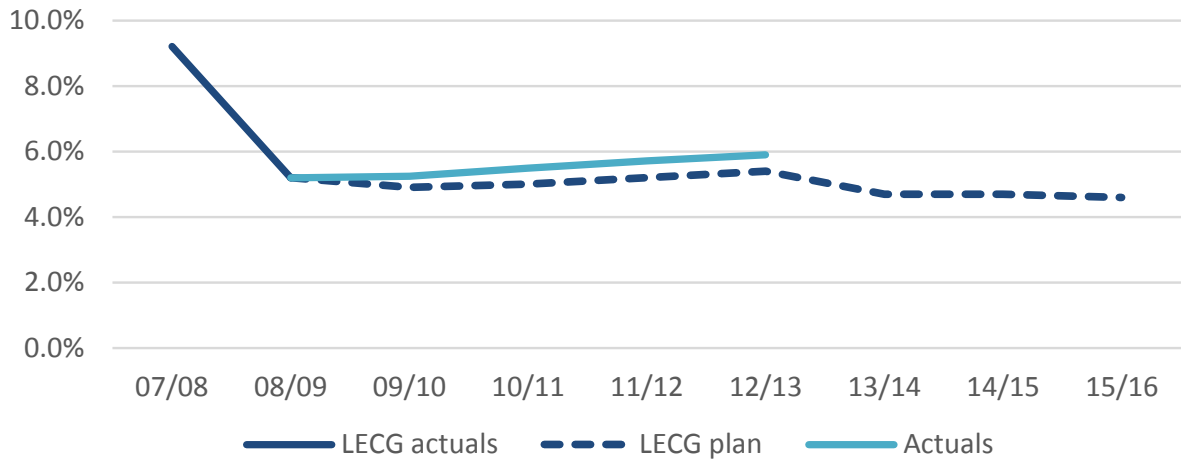
NERL Costs	2008/09	2009/10	2010/11	2011/12	2012/13
NAT1 (NATS)	12.4	12.4	12.1	11.5	12.1
NAT3 (NSL)	18.0	17.8	17.0	17.7	17.9
Total (NAT1 + NAT3)	30.5	30.1	29.2	29.2	30.0
NERL total charges	587.1	575.4	531.4	510.6	508.2
Interco. charges as % of total costs	5.2%	5.2%	5.5%	5.7%	5.9%

Source: Data from NERL

Overall, charges from intercompany agreements (both ICAs and MSAs) are also a relatively small proportion of NERL's total costs, in the range 5%-6%. A breakdown of these charges is available between NATS and NSL (i.e. the charges that NERL are paying to these two entities), and for the most recent financial year (2012/13) charges from NSL are about 50% greater than charges from NATS.

LECG's 2009 report undertook a similar analysis back to 2007/08, which used forecasts of charges from 2009/10 onwards. This trend is shown below in Figure 5.2, and is compared to the most recent actuals (from Table 5.2 above).

Figure 5.2: NERL intercompany charges (MSAs and ICAs) as percentage of total NERL costs



Source: LECG report (2009), data from NERL

Figure 5.2 above shows that intercompany charges to NERL have been fairly consistent over time, with the exception of the fall in charges between 2007/08 and 2008/09. Aside from this

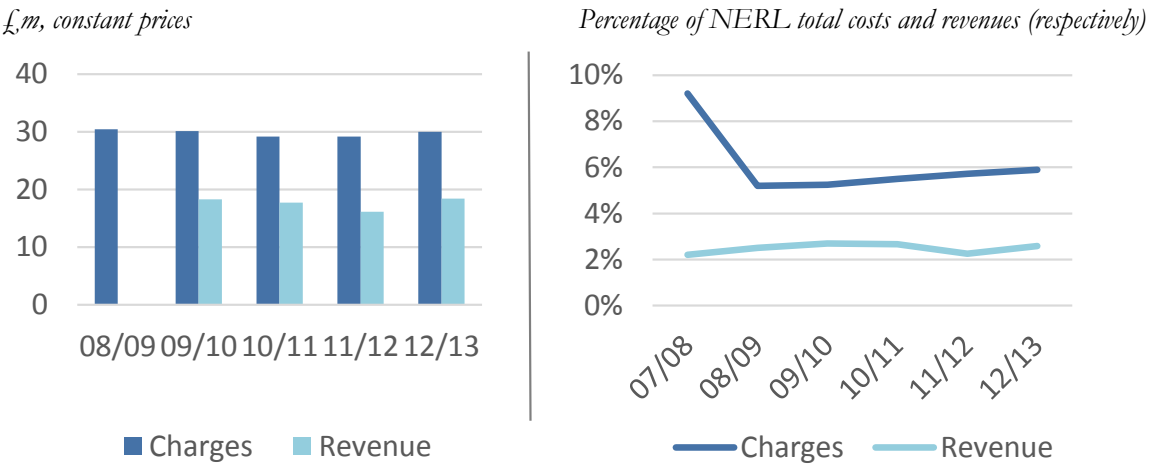
fall (which is explained within the LECG report[30]), charges to NERL have remained at between 5% and 6%, and are expected to remain at a broadly similar level. In addition, as with intercompany revenue, the forecasts of intercompany charges in LECG's 2009 report are close to the actuals.[31] This suggests that NERL's intercompany charges are also fairly predictable over time. However, we note that there has been a slight upward trend in intercompany charges (as a percentage of NERL's total costs) since 2008/09.

As with revenues, the fact that intercompany charges are relatively small and relatively constant over time (excluding the fall in 2008/09) means that potential misallocation of intercompany charges would be unlikely to have a significant impact.

5.4.3. Revenue versus charges

Comparing NERL's intercompany revenues and charges over time shows that the former are considerably smaller, as shown in Figure 5.3 below. This is unsurprising because NERL receives a number of head-office type services from NATS.

Figure 5.3: NERL intercompany charges versus intercompany revenues



Source: *LECG report (2009), data from NERL*
Notes: *Value of charges not available for 08/09 due to redaction from LECG report.*
Percentage figures in right-hand panel are sourced from both LECG report and CEPA analysis of NERL data

Given that NERL is a regulated entity, we are wary of intercompany charges increasing at a faster rate than revenue, which could enable other entities within the NATS group to transfer costs to NERL. However as illustrated by Figure 5.3 above, there does not appear to be significant evidence of this, particularly as intercompany charges (as a percentage of total charges) fell in 2008/09 (see the right-hand panel). However, we are more concerned about the slight upwards trend since 2008/09, particularly as intercompany revenues (as a percentage of total revenues) have remained fairly constant. This is due to total costs falling over time (through efficiencies), but intercompany charges remaining fairly constant.

[30] LECG's report (p.40) quotes NERL as stating "the reduction in charges from MSAs between 2007/08 and 2008/09 is as a result of an internal re-organisation that took place in that year".

[31] As a useful cross-check, we note that our calculations for intercompany charges derive the same result for 2008/09 as the LECG report (i.e. 5.2%). This provides confidence that

Having discussed this issue with NATS, it states that between 08/09 – 12/13 there has been a significant reduction in ATSA manpower (due to the introductions of iFACTS and EFD) and Engineering manpower as well as reductions in non-staff costs (Asset management FM and the closure of Hurn). Whilst this generated efficiencies in NERL's internal costs, NATS note that intercompany activities primarily relate to fairly specific functions and activities (e.g. insurance costs and compliance costs), which have less scope for efficiency.

This seems to be a plausible explanation, and we do not consider there to be strong evidence that NATS is misallocating costs. However, we consider that this is an area to monitor over time. It is important that NERL demands the same efficiencies from NSL that it would do from a 3rd party service provider and NERL should aim to achieve the same efficiencies in these service lines as it does in its other service lines.

5.5. Analysis of intercompany costs 2013-19

We have also briefly reviewed the evolution of intercompany costs in the NATS business plan:

Figure 5.4: Business plan analysis

Plan 2 - Total NERL Staff & Direct Underlying Costs
Calendar Year

2012 CPI Prices £m	2011 Actual	2012 Forecast	2013 Plan	2014 Plan	2015 Plan	2016 Plan	2017 Plan	2018 Plan	2019 Plan	CP3 Total	RP2 Total
Staff Costs	(261)	(261)	(261)	(257)	(249)	(247)	(249)	(251)	(252)	(1,041)	(1,248)
Capitalised Internal Labour	37	35	36	38	36	35	36	34	34	145	175
Non Staff Costs	(101)	(93)	(97)	(96)	(94)	(92)	(91)	(90)	(88)	(387)	(455)
Intercompany Costs	(29)	(30)	(30)	(30)	(29)	(29)	(29)	(29)	(29)	(118)	(145)
Less Cost of Services to NSL	15	16	18	18	18	18	18	18	18	67	90
TOTAL	(339)	(332)	(335)	(327)	(318)	(315)	(316)	(317)	(317)	(1,334)	(1,583)

Between 2013 and 2019:

- Total NERL costs are forecast to decrease by c.6%.
- The cost of providing services to NSL is however set to stay broadly constant.

Consistent with the issue identified above this might suggest that NERL is being less aggressive with efficiencies in relation to its services to NSL. However we note NERL's comment that "intercompany activities primarily relate to fairly specific functions and activities (e.g. insurance costs and compliance costs), which often have less scope for efficiency" and that income from NSL is also set to increase which mitigates concern about efficiency in this area.

5.6. MSAs

5.6.1. Introduction

As stated above, MSAs typically involve the provision of common activities such as board/corporate functions, human resources, health and safety, insurance, etc. NATS and NERL are providers of these services, whilst NERL and NSL are beneficiaries (and therefore incur the costs of these services).

5.6.2. Further analysis

At the outset it is important to differentiate between two types of MSAs involving NERL:

- **Services provided to NERL**: Where one entity (i.e. NATS) provides services to NERL, for which NERL pays.
- **Services provided by NERL**: Where NERL provides services to another entity, and receives revenue in return.

In terms of the services provided to NERL (for which NERL pays), we have received a presentation on corporate costs which shows the value of the MSAs (2011/12 plan and actual, as well as 2012/13 plan). We have also received the total value for MSAs over the last few years[32]. This has enabled to undertake a high level analysis of MSAs, which is contained within the following sub-s.

In addition, we have also assessed the services provided by NERL, and in particular their relative costs and revenues. This is discussed in the sub- entitled "MSA Margin".

High level breakdown of NATS' MSA costs

To consider services provided to NERL, the start point is the MSA contracts between NATS and NERL/NSL. Table 5.3 below provides a breakdown of the costs allocated between NERL and NSL, based on the 2012/13 plan. The cost sheets received from NATS state that all of these costs are "charged at cost by NATS Ltd to NERL and NSL, using a fair allocation of costs based on the most appropriate drivers for the activities".[33]

[32] spreadsheets entitled "MMW revenue analysis by year" and "MMW Inter Co charges analysis by year"

[33] NATS presentation: "Allocation of Corporate Costs", slide 5.

Table 5.3: High level cost allocation of NATS' MSA costs (2012/13)

Services	MSA costs (£k)			% of total costs	
	NERL	NSL	Total	NERL	NSL
Safety Assurance and Improvement	2,098	525	2,623	80%	20%
Health and Safety	558	144	702	79%	21%
Board	1,110	256	1,366	81%	19%
Facilities Management	246	64	310	79%	21%
Finance	1,726	468	2,194	79%	21%
Insurance	5,989	1,549	7,538	79%	21%
NATS Ltd. Employee costs	448	116	564	79%	21%
Total	**12,175**	**3,122**	**15,297**	**80%**	**20%**

Source: Data from NERL

Table 5.3 above shows that the majority of NATS' MSA costs are allocated to NERL, and that the allocation percentage is very close to 80%, across all the major MSA cost categories. This percentage appears to be related to relative turnover, given that the turnover driver (shown in Table 5.4 further below) shows a roughly 80:20 split.[34] This approach is consistent with NERL's explanation that all NATS cost are allocated amongst entities in the group.

Other MSA costs

There is also an MSA between NERL and NSL. The majority of the services are provided from NERL to NSL, including a range of 'head office'-type functions (e.g. IT, HR, Executive functions, business performance analysis, communications, finance, etc.). However, in the past NERL has also paid NSL around £340k (in 2012/13) for business development and customer affairs services[35]. The charge from NSL to NERL covered the support provided by the team for Regulatory business, including Customer Consultations etc.

Taken together with the MSA costs for services from NATS, the cost to NERL of receiving MSA services is roughly £12.5m.

Process

In terms of the process for setting MSA charges, NERL states that the level of charge is agreed as part of business planning process, and that any variations will only be agreed if the scope or level of costs varies significantly from the plan. The business planning process involves formal meetings and discussions between business area managers and senior managers/directors in NERL and NSL. We have not been a party to this process but the approach described by NERL, and set out in its business planning document appears reasonable, although from our perspective not particularly transparent.

[34] However, as we have not seen NSL's total turnover we cannot confirm this to be the case.

[35] Note that the Customer Affairs team transferred from NERL to NSL w.e.f. FY 2012/13

Reconciliation to profit and loss

It is also not immediately evident where NERL's share of MSA costs (£12.5m) feed through into the profit and loss account in the 2012/13 management accounts, this is because it is distributed across several different areas. NERL has informed us that the £12.5m includes:

- £2.8m of Insurance Direct Costs (included under "Direct Costs Other Areas" in the profit and loss statement);
- £9.3m of NAT1 Inter co charges (included under "Costs Not Directly Attributable"); and
- £340k (the business development / customer services costs discussed above). This is not specifically identified in the management accounts, but NERL informs us that it is part of the £4.5m of Finance Airspace Regulated costs (included under "Costs Not Directly Attributable").

It is useful to have received this explanation from NERL and we acknowledge that there are several different ways to categorise costs to provide relevant and meaningful information to users. However, it would be more transparent from a cost allocation perspective to make MSA costs more easily identifiable within the profit and loss accounts such that allocation can be more effectively tested.

MSA cost drivers

MSA costs are allocated between different entities (NERL and NSL) using allocation drivers, in a similar way to other costs (i.e. as discussed in Chapter 3). This is a two stage process:

- The first step in the allocation of MSA costs is between NERL and NSL. Because these costs are initially allocated between entities this requires the use of a different set of drivers to those discussed in Chapter 3 (which allocate costs that are already specific to NERL).
- The second step is that costs which are allocated to NERL (under the previous step) are then allocated between the different service lines within NERL. Because MSA costs are included within BPS operating costs and use the same drivers (which were analysed in Chapter 3), we do not consider the processes further here.

In this section we focus on the first stage of the process. In Table 5.4 below we provide information on the MSA cost drivers relating to services provided by NATS Ltd. In particular, we show the relevant allocation percentages (between NERL and NSL), and list a sample of the MSA activities/costs that are allocated by the different drivers. From an analysis of the detailed-level cost data for MSAs, it is apparent that the majority of these costs are being allocated by the turnover driver.

Table 5.4: MSA cost allocation drivers (%, 2012/13)

MSA cost driver	Driver no.	NERL	NSL	Sample of activities
Audit Plan	A0008	85%	15%	• Deliver Internal Audit • Under/Over recovery on cost centre
Financial decision support Driver	AFDS1	90%	10%	• Business Planning & Forecasting • Financial Decision Support
NATS Safety	AOTH001	80%	20%	• Business Management • Corporate safety activity
Turnover Driver	AINC2	79.5%	20.5%	• Administration & Management • Board activities
NERL 100%	AOTH003	100%	-	• SESAR 16.06.01 Support • CAA Transition Altitude Project
NSL 100%	AOTH002	-	100%	• Commercial Activities - Airports • Commercial Activities – Consultancy

Source: Data from NERL

The main points from Table 5.4 above are as follows:

- Although there are several different MSA cost drivers with different allocation percentages between NERL and NSL, the driver that is applied to the vast majority of MSA costs is the turnover driver (AINC2), which splits costs broadly 80:20 between NERL and NSL. This is demonstrated in Table 5.3: further above, which shows that NERL and NSL split costs broadly 80:20 across all of the main MSA cost categories.

- Intuitively, there are several categories of costs that seem to be allocated in a reasonable way. For example, commercial activities are fully allocated to NSL, whilst the CAA Transition Altitude Project is fully allocated to NERL.

- Although we are not necessarily able to verify whether the allocation percentages for each individual driver are correct, some activities are clearly related to the correct driver. For example, 'Deliver Internal Audit' and 'Under/Over recovery on cost centre' are both allocated using the Audit Plan (A0008) cost driver.

- It is however sometimes less obvious why a particular driver has been assigned to a particular activity. For example, the activities 'Business Planning & Forecasting', 'Business Management' and 'Administration & Management' are allocated using three different MSA cost drivers, despite being activities that sound fairly similar. However, having requested further clarification from NERL on this issue, NERL stated that although the activities sound similar, "the areas providing them are different and the activities are done at a different level." For example, some "Business Planning & Forecasting" is carried out by the Finance team, whereas some is carried out by the Safety team. Finance allocates 90% to NERL and 10% to NSL, whereas Safety allocates

80% to NERL and 20% to NSL. This explanation seems reasonable and therefore this is not an area of concern.

- We also asked NERL whether there is a robust process for driver selection. NERL stated that "the choice of driver is discussed at great length during the planning process". This is a process that we are unable to review. We therefore recommend that NERL ensures that the justification for driver selection is documented in some way. This would ensure that there is transparency around driver selection, and that NERL is able to make effective driver selection decisions in the future.

MSA Margin

NERL states that MSA services are provided at cost (i.e. zero margin), and we have analysed a sample of information provided by NERL to test whether this is the case.

In testing we have considered four of the largest revenue lines within BPS (of services provided by NERL to NSL):

- IS services (operational costs)
- Depreciation Charges for IT Assets
- Environmental services
- Corporate Communications

We compared the revenue for these activity lines within BPS against supporting bottom-up spreadsheets on the costs of these activities. For all four activity lines, we found that the total costs (as per the supporting information) were equal to the total revenue in BPS, which demonstrates a zero margin on these services.[36]

However, our analysis did highlight a potential limitation of BPS: For the services stated above BPS identifies the amount of revenue, but does not show the level of MSA costs. Having discussed this issue with NERL we are advised that this is because these costs for MSA services provided by NERL "will follow the cost allocation associated with the relevant business area activity" ". The mechanics of NERL's approach are quite complex, but in summary NERL acknowledges that the resulting costs and revenues, while identical, are not necessarily presented in the same service line on the face of the P&L statement in the management accounts. NERL states that as it applies a Single Till approach there will be no impact on the determined costs (which are net of revenues) for either UKATS or Oceanic.

However we recommend that NERL considers further whether it is feasible to separate these MSA costs from other costs within a given Business Area.

[36] We note that these supporting spreadsheets could potentially have gone into more detail (e.g. staff costs were shown as a whole number, as opposed to seeing wage rates, hours worked, etc.), but given the timelines we consider the information provided by NERL to be at a sufficient level of detail for the purposes of this project.

5.7. MSA Summary

Overall, our analysis has aimed to consider the extent to which LECG's recommendations have been implemented and to consider any other changes made to the system since the last review. We have found it difficult to understand the MSA process but it appears that little has changed since the processes for intercompany cost allocation were last reviewed by LECG. In relation to LECGs findings we make the following observations:

- **Tracing costs**. Although we have received some useful information on the quantum of MSA costs, and the breakdown between different cost categories, we are unable to trace costs from the MSAs through the cost allocation system (using BPS alone) and into the accounts;
- **Charging at cost**. Our understanding is that the CAA is content that charging at cost is an appropriate approach for MSA costs. We have considered NERL's bottom-up costs and can confirm that NERL is providing MSA services at cost;
- **Appropriateness of drivers**. For each of the MSA costs drivers, we have considered a sample of activities. We have generally found that the drivers and activities are reasonably well-matched, and NERL has provided a seemingly reasonable explanation where it was not immediately clear to us why particular drivers had been chosen. However, although there is evidence that NERL's choice of drivers is robust, we are not aware of any documents that provide an audit trail to justify driver selection agreed as part of the business planning process;
- **Impact of applying alternative drivers**. Although we consider that it could potentially be beneficial from a theoretical perspective to replace turnover drivers with EPMU drivers we have not tested this process again (such testing was carried out by LECG previously) given that CAA and NATS have agreed previously not to adopt this recommendation.

5.8. Consistency

We understand that once allocated to NERL MSA costs are split using the NIBs system and we discuss our conclusions on cost and revenue allocation in Chapter 3. However this is the second stage of a two stage process. While we can confirm that the allocation of MSA costs between NERL and NSL follows the driver percentages provided by NERL we cannot comment on the justification for these percentages because driver support files are not available.

Our analysis also highlighted a potential limitation of BPS: For the service stated above BPS identifies the amount of revenue, but does not show the level of MSA costs. The mechanics of NERL's approach are quite complex, but in summary NERL acknowledges that the resulting costs and revenues by service line will not match exactly.

5.9. Transparency

Overall the process of cost allocation for MSAs has been particularly difficult to follow because the documents available for our review are limited. NERL is able to describe the process that it follows and this appears logical and consistent with our system testing where we are able to undertake it. However, the process cannot be fully tested. While we have found the cost allocation of MSAs to be difficult to follow, we do not have any significant concerns in this area, transparency is however a significant issue and is something that has limited the scope and effectiveness of our review

5.10. Recommendations

A lack of transparency is the key issue that we identify. Overall it seems that this is an area where there is established custom and practice but that this is not formally captured in any one place. We recognise that in the scope of NATS operation the costs associated with MSA's are very small. However we recommend that NATS improve the audit trail associated with these agreements. We also consider that NERL should establish whether it is feasible to separate MSA costs from other costs within a given business area such that is can improve the accuracy of reports that depend on this information.

5.11. ICAs

5.11.1. Introduction

ICAs are bilateral contracts between individual entities within the NATS group. NATS' inter-company trading policy is "to set [ICA] prices consistent with the principle of the arms-length standard". Our analysis considers whether this is achieved.[37]

Given that the individual companies within NATS are all owned through a common shareholder, there could potentially be incentives for over-/under-charging within any ICAs, in order to cross-subsidise across the group. The result is that charges within ICAs may potentially be set in a non-competitive fashion, resulting in NERL providing a cross-subsidy to other entities within NATS, and ultimately increasing costs to consumers.

To prevent this potential scenario, NATS is required to undertake market testing wherever possible. i.e. to consider the prices that might be charged by a 3rd party to perform the same service. This is equivalent to setting prices which are consistent with the arm's length principle[38] (with special consideration being given to the cost of defined benefit pension benefits). The RAGs state that:

> "In the case of services traded between NERL and other group companies, these are carried out at an agreed price. Inter-company prices are set by reference to market prices where such prices exist and are appropriate, and otherwise by reference to the costs of the activities performed".[39]

We also note that market testing is consistent with NATS' Inter-Company Trading & Pricing Policy, which provides guidelines for setting the prices of intercompany agreements. However, it is only required where market testing is practically feasible:

> "Where comparable market transactions exist, documentary evidence of such a transaction should be provided along with an explanation of how the price is consistent with the comparable market transaction".[40]

A practical example of market testing would be to put the service out to tender, which would allow a comparison of bids from the relevant NATS entities and other potential 3rd party providers.

However, NERL considers that market testing is difficult because the services it provides are specialist, and few other companies would be able to provide similar services on a third party basis. As such, NERL considers that there is only a limited amount of market-based pricing information available.[41] NERL states that it does aim to utilise public domain information on market prices when setting charges, but where this is not available NERL uses an alternative

[37] NATS-Wide Inter-Company Trading & Pricing Policy, January 2013, p.5.

[38] An arm's-length price is one that would be reasonably agreed by two independent third parties in the wider market.

[39] NATS (En Route) Plc, DRAFT Regulatory Accounting Guidelines, Issue 12, 16/4/13, p.41

[40] NATS-Wide Inter-Company Trading & Pricing Policy, January 2013, p.7.

[41] Our understanding is the majority of air traffic control service providers are state-owned and/or operated, and this may contribute to the apparent lack of available data.

approach based on the regulatory accounting guidelines, its Pricing policy and Licence requirements.

NERL acknowledges this point in its Inter Company Trading and Pricing Policy, which states that "it is recognised that due to the specialist nature of services that NATS provides, comparable transactions may not be readily available". Furthermore, CAA's latest (draft) regulatory accounting guidelines acknowledge that "market based charging will not be possible for most internal NATS group transactions for some time".[42]

NERL's alternative approach is to adopt a "cost plus" method of pricing, which NERL considers is consistent with cost of service regulation. This approach ensures that the entity providing the service is reimbursed for its costs, including the cost of capital (the return/profit required by a private investor, given the level of company risk).[43]

However, we note that in this instance, NATS' internal policies require it to clearly explain why market testing has not been possible, and to provide evidence to support the "cost plus" pricing approach:

> "Where a comparable market transaction is not available, a clear explanation of why this is the case. In these cases, a narrative explanation should be provided for the cost plus basis of pricing adopted with detailed calculations provided to support the price".[44]

Overall, ICAs differ to MSAs in that the former includes a profit margin for services provided, whilst the latter are undertaken at cost.

5.11.2. Further analysis

Cost allocation drivers

Table 5.5 below shows the ICA cost drivers which allocate the most ICA costs. NERL uses 13 different drivers to allocate ICA costs, but the top 6 drivers account for 99.7% of total ICA costs in 2012/13, as shown below.

[42] NATS (En Route) Plc, DRAFT Regulatory Accounting Guidelines, Issue 12, 16/4/13, p.41
[43] We note that NERL maintains records [to support its charging decisions?]
[44] NATS-Wide Inter-Company Trading & Pricing Policy, January 2013, p.7.

Table 5.5: Top 6 ICA cost allocation drivers (2012/13)

ICA cost driver	Driver no.	Costs (£m)	% of total costs
Turnover - NERL Total External	BIN24	16.2	54.1%
North Sea Helicopters	B0040	6.1	20.3%
Eurocontrol 100%	B0100	4.7	15.6%
Workstations SWANWICK - TC	BWS35	2.1	7.0%
Workstations NERL WIDE - all Service lin	BWS20	0.4	1.5%
NERL Services to NSL	B0A95	0.3	1.1%
Total		**29.9**	**99.7%**

Source: Data from NERL

Table 5.5 above shows that over 50% of ICA costs are allocated using the 'Turnover – NERL Total External' driver. Consistent with views expressed in earlier Chapters, and as discussed in the LECG report, it is questionable whether turnover is the most appropriate driver due to potential issues with circularity. We note that other approaches such as EPMU have regulatory precedent. However, we also note that CAA has previously stated that it does not require turnover drivers to be amended.

Revenues and charges on ICAs – high level analysis

In relation to the profitability of NERL's ICA contracts, we requested information on the margin to NERL under these contracts. Although we have not been able to separate ICAs specifically Figure 5.5 below shows the total EBIT margin for NERL's ICAs and MSAs with NSL for recent years, and compares it to NERL's overall EBIT margin. All figures are sourced from NERL's management accounts.

Figure 5.5: NERL margin on ICAs/MSAs with NSL versus NERL overall margin[45] ***REDACTED***

Source: Data from NERL (margin spreadsheet and management accounts)

[45] In this figure, NERL overall margin is equal to EBIT (revenue minus costs) as a percentage of revenue. For the NERL margin on ICAs/MSAs, the numerator is equal to NERL revenue (i.e. from services provided by NERL) minus NERL charges (i.e. from services provided by other entities).

Figure 5.5 above shows that the stated margin for NERL's ICAs/MSAs with NSL has been considerably lower than NERL's overall margin for the last five years, including being negative during 2008/09 and 2009/10. Having requested further information from NERL as to why NSL's margins have varied so much, NERL states that this is due to different cost allocation drivers being applied over time.[46]

In addition, there are some complexities around how costs and revenues are allocated for specific activities. NERL states that whilst revenue from ICAs/MSAs is allocated to the specific service line "NERL Services to NSL", the same is not always true for costs. For example:

- The direct costs of ICAs will follow the revenue allocation; but
- The indirect costs and costs associated with the MSAs will follow the cost allocation associated with the relevant Business Area activity.

We consider that there may be some inconsistency here and that this issue should be reviewed by NERL.

Analysis of BPS data

We have undertaken further analysis of the data in BPS to consider several questions:

- Does revenue data in BPS reconcile with NERL's schedule of ICAs?
- Is it possible to clearly see how, for a given activity, costs and revenues are feeding through BPS?
- If yes, what is the margin on these activities, and how does this margin (calculated from detailed BPS data) compare to the high level margins stated in the previous sub-?

Firstly we compared the NERL's ICA revenues in the BPS against the 2012/13 actual contract values, and found that the totals matched to within £63k (based on totals of c.£12.5m). Therefore although this is not absolutely correct, the system is recording revenues with a very high level of accuracy.

Secondly, we considered several different activities to assess whether costs and revenues could be easily identified. From an initial analysis within BPS, we found that some activities were relatively easy to follow through the system whilst at other times it was less obvious due to differences in the codes.[47] However, we requested additional guidance from NERL, and they were able to provide a sample of activities in BPS with associated costs and revenues. This is shown below in Table 5.6.

[46] NERL states that "in the early years a significant amount of costs were driven using work station drivers whereas in the last two years no work station driver allocations were used to drive costs to this Service Line."

[47] For example, revenues within BPS for 'ORRD' are included under the activity code "B1003/NS/XX/E13/B2". However, there are no costs that correspond to this activity code. In contrast, for the activity line 'Private Circuits for NSL 12/13' there is a relatively large volume of costs included under its corresponding revenue code.

Table 5.6: Sample of individual ICA activities provided from NERL to NSL (2012/13) ***REDACTED***

ICA activity category	Revenue (£k)	Costs (£k)	Margin
CW Private Circuits (202385)			
CW ORRD (202389)			
CW CCDS (202389)			
CW Consultancy Contracts			

Source: Data from BPS (the source for NERL management accounts)

As shown in Table 5.6, this sample did identify costs and revenues for the selected activities, which provides some assurance that both ICA costs and revenues are feeding through BPS. However, costs are very small for two of these lines, which produces a large positive margin on a line-by-line basis (e.g. CW ORRD / CW CCDS). As indicated previously this is because the individual activities relate to the direct costs only, whereas indirect costs (e.g. overheads) are included within BPS as separate items. This is the same issue as discussed in relation to MSAs, further above.

For some individual activities the results change markedly when overheads (depreciation charges) are included, examples are provided in Table 5.7 below. This information was obtained via an additional spreadsheet from NERL (entitled "NATS pricing model") which provided a detailed bottom-up analysis of the ICA costs and revenues for two sampled activity lines.

Table 5.7: Margins on two ICA services provided from NERL to NSL (%) ***REDACTED***

ICA activity category	2012/13	2013/14	2014/15
CW ORRD (202389)			
CW CCDS (202389)			

Source: Data from "NATS pricing model" spreadsheet

Table 5.7 above suggests that the margins on these particular ICA activities are very low, [**REDACTED**] and therefore potentially inconsistent with arms-length pricing. Having requested further information from NERL, we understand that these low margins (arise from the inclusion of depreciation charges, which are not marked-up) are shown against the ICA contract "for pricing purposes only", and in reality the depreciation costs relating to an asset form part of Asset Management costs.

The "NATS pricing model" spreadsheet demonstrates that there is considerable background information which sits behind the BPS system, and provides further evidence to support the rigour of cost allocation within BPS. Although there were some minor variations between BPS and this "pricing model", these were explained by NERL (i.e. as minor variations between plan and actual).

However, although this additional rigour shows there is evidence supporting the BPS entries, it does mean that it is more difficult to track costs through BPS. This reduces the transparency of the system and makes it more difficult to assess the accuracy of the cost allocation.

Reconciliation from BPS to management accounts

Finally we analysed the detailed cost data for ICAs (from the BPS system), and after aggregating this data by service line, we have been able to reconcile the figures in the BPS system with the intercompany costs by service line as stated in NERL's 2012/13 management accounts. This indicates a good level of transparency between the system and the management level summary information.[48]

Market testing

As indicated above our work has centred on establishing whether NATS delivers against the principle of arm's length pricing. To this end we have requested details of any recent market testing that has been undertaken. We understand it to be the case that there has been none that can be evidenced although NERL has stated that it has some benchmark information for onward routed radar services as there is a price list for these services . This is consistent with the prevailing view that such testing is not possible in the context of the specialist services being procured under the ICAs. NERL states that this is because there is no other ANSP UK competitor, and international comparators are often state-owned making it difficult to undertake reliable data comparisons. We also note that CAA is currently sympathetic to the view that it is difficult for NERL to undertake market testing.

Nonetheless, NERL's procedures require that records be kept as to why market testing is not possible. This is currently not available and indicates that there is no robust audit trail to support the principle that NERL has thoroughly considered the possibility of market testing. We also note that NERL's procedures require an analysis of arm's length pricing i.e. how the prices for ICAs were determined. We have seen no evidence that this is implemented in practice.

5.12. ICA Summary

There are a number of different entities within the NATS group and a significant amount of trading between them. This intercompany trading is managed through the use of agreements. ICAs cover services that could be provided a third party i.e. they are commercial agreement that include a mark-up on cost. In comparison to total operating costs, intercompany costs and revenues are small and therefore have only a small impact on cost allocation.

We have been able to undertake some testing of ICAs and we note that BPS appears to be handling information in a rigorous manner. For example, cost and revenue data within BPS is closely matched to both the agreements and the management accounts. However, as for MSAs, a limitation of BPS is that overhead costs are not apportioned to individual ICA activity lines. The treatment of overheads reduces the transparency of the system, in particular in relation to identifying the margin on ICA activities (without referring to additional spreadsheets outside of BPS).

[48] However, we note that the categorisation of intercompany costs does vary between management accounts in different years, and so treatment of costs is not fully transparent.

Having reviewed how the system operates we also asked for details of recent market testing and where this was not available details that support the principle of arm's length pricing. Despite these items forming part of NATS internal procedures no information has been provided. In the case of market testing we understand that this is because none has been undertaken. In the case of arm's length pricing we are assuming that this is also not routinely carried out. We therefore have some concerns about the degree to which NERL is complying with its own procedures in this area and some concern about the level of the margin being applied to at least some of its projects.

5.13. Consistency and transparency

Our review suggests that at the highest level there is a strong relationship between the agreements, the cost allocation system and the accounts. There is less transparency about the costs at a more granular level i.e. we cannot fully assess the margins (by analysing BPS alone) because of the way that overheads are managed and we cannot assess whether margins are consistent with market testing or the analysis prepared to support market pricing. NERL indicates that it reviews gross margins monthly through its management accounts. It accepts however that the BPS system is limited in applying overheads to individual agreements.

5.14. Recommendations

The quantum of cost associated with ICA's is small in relation to NATS costs overall, but we have found it difficult to follow the process applied through the cost allocation system, other than at a high level. Indeed the system cannot easily produce an analysis of the net margins by project. We therefore recommend that NATS consider how the system might be developed to provide greater transparency in this area. We also consider that NATs should ensure that is compliant with its own procedures to market test or where not possible develop and document the approach taken to arms-length pricing under its ICA's

6. CONCLUSIONS

6.1. Terms of reference

As part of the RP2 price control CEPA and BDO have been appointed by the CAA to provide it with analysis to indicate whether allocations and apportionments that NATS makes between: (i) its licensed business and unlicensed business; (ii) the different segments of its licensed business; and (iii) the allocations that it makes to operating and capital costs, for the purpose of regulating charges and setting cost effectiveness targets for various segments of the NATS business can be relied upon.

In particular, the work scope requires us to examine whether the allocations, attributions and cross charges (including between operating cost and capital expenditure) applied by NATS are fit for the purpose of regulation considered against:

- suitability of cost allocation methods;
- adequacy of update process;
- transparency of process including the process for sign-off procedure for accepting costs from affiliates; and
- consistency of application including: (i) whether the same rules are applied for costs allocated from NERL to affiliates as from affiliates to NERL; (ii) comparison of actual allocations to the plan for CP3; and (iii) comparison of planned allocations in the initial business plan for RP2 to current allocations.

In this final chapter we bring together our conclusions on the items of interest to the CAA.

6.2. Conclusions

In the following sections we review NATS response to the most recent previous study, summarise our conclusions and provide our own recommendations.

Response to previous studies

Our work follows reviews by other consultants as part of previous price controls. The most recent prior review was carried out by LECG in 2009 and it concluded that the systems were fit for purpose. Previous reviews have however identified some weaknesses and errors and have made recommendations for improvement.

We set out below how we consider NATS has responded to the recommendations of the previous LECG study.

Table 6.1: LECG recommendations and CEPA/BDO view of current position

Ref LECG	Area	LECG View/Recommendation	CEPA/BDO view of current position
3.69-71	Overall	Some significant processes are not fully integrated	Not addressed – NATS

Ref LECG	Area	LECG View/Recommendation	CEPA/BDO view of current position
	process	into the NIBS system which raises the risk of error/inconsistency and impacts transparency. LECG suggested that NERL should consider further whether NIBS could be extended to become a fully integrated system in the longer term. This would include adding further functionality to enable it to produce all financial statements, regulatory submissions and reduce manual intervention	considers that the cost associated with such a change will not be outweighed by the benefits.
4.22	Inter company	It would be more transparent to disaggregate group insurance into costs that could be allocated using a single driver. Such an approach would be consistent with NATS' approach more generally and would be more transparent	We are advised that insurance costs have been disaggregated and blended drivers have been replaced by use of the turnover driver for Insurance costs
4.72	Inter company	Although immaterial overall it was suggested that for consistency with wider recommendations health and safety costs should be allocated by FTE and turnover drivers should be replaced by EPMU given regulatory precedent	Not addressed – NATS and CAA concluded that the change to EPMU change was unnecessary
5.20	Capex	LECG recommended that an equivalent analysis to that set out in table 5-3 be undertaken (comparison of allocation by engineering judgement and that used for depreciation). In the longer term is was suggested that the process of using engineering judgement and the process for treatment of depreciation be made consistent	The process has been changed such that it is consistent throughout
5.26	Capex	New accounting rules mean that borrowing costs are to be capitalised. If interest is also capitalised then this would result in a double count. At the time NERL confirmed it would not capitalise interest	Interest has not been capitalised in the Regulatory Accounts
6.71	Revenue and opex	LECG found that support for driver input data was poor. There was a high prevalence of discrepancy. LECG therefore recommended a full review of files and conformity with best practice which is: • easy to follow/audit • links to primary evidence • updated annually	Significant improvement has been made but we consider that there is scope for some limited further improvement e.g. in setting out greater rationale for drivers

Ref LECG	Area	LECG View/Recommendation	CEPA/BDO view of current position
6.74	Revenue and opex	LECG considered that allocation of these costs on the basis of EPMU to be more appropriate than turnover drivers. LECG cited significant regulatory precedent for this approach	Not addressed – NATS and CAA concluded that this change was unnecessary

6.3. Suitability of cost allocation methods

The processes employed by NATS to achieve cost allocation are more complex than we originally understood. We have reviewed the SAP based system which automates the allocation of operating cost and revenue and found that the processes are fit for purpose. There have been improvements over time; for example to driver administration, and the system is relatively straightforward. We have noted a few small areas for improvement and these appear in our recommendations below.

However, our initial view that the central SAP based system manages all of the allocation processes, irrespective of type of cost, was a misunderstanding. Significant processes still happen in off line spreadsheets, as was the case at the time of the last review. For example, although capex allocation is in principle the same as opex cost allocation, parts of the process are completed off line and we consider this creates a risk of error and misallocation. However, we note that NATS uses the same team to manage opex and capex allocation to minimise this risk.

In relation to intercompany agreements the processes for cost allocation are somewhat less transparent than is the case for other parts of the system and it has been more difficult to test them. However, high level testing suggests the processes are robust; we have found no major issues and at total level we have been able to reconcile agreements to the data held in the system and then to the management accounts. At a more granular level testing has however been more difficult to complete and in some cases we have not been able to fully test the approach employed by NATS. This is the case in relation to the allocation of overheads to both MSAs and ICAs where the BPS system does not currently enable overhead costs to be allocated to individual contracts. As a result and in relation to ICA's we are not able to fully establish the margins being charged, because the relevant overhead costs cannot be separately identified. We also have been unable to confirm that NATS arm's length pricing processes being followed. We consider that NATS should review whether it can deliver greater transparency in this area.

Overall we have a high level of confidence in processes that are fully automated and that we have been able to review and replicate. We note that these processes are applied to the majority of costs. We are also confident at a high level about processes which sit outside of the main system but have some relatively minor concerns that we have been unable to fully address. The elements of cost affected by this are small. Overall, we agree with LECG's recommendation that NATS should consider full automation of the system. We note that the most sensible point at which to deliver this will be when the BPS software is replaced (it is close life expiry now).

6.4. Transparency

As indicated above, the system is complex and the mix of automated and off line processes does not aid transparency. It has been particularly difficult to understand how some of the offline processes work. The best example of this is in relation to intercompany trading where it is not possible to trace costs for individual agreements through the system. In all cases however there appears to be a logical and established process for cost allocation the issues are that this is not always captured in a single place and the accounting systems do not readily support detailed analysis of these costs.

6.5. Consistency

NATS has emphasised that improvements have been made to the allocation system since it was last reviewed, and we have seen the positive impacts of this. However, the changes have not extended to fully integrating all processes. As part of our review of system operation we have obtained the asset allocation spreadsheets so that we may test the process. These are linked spreadsheets with links to other spreadsheets that fall outside our review. While we have been able to test allocation and have not found any significant errors, we consider that there is a risk in running multiple set of spreadsheets

In our opinion consistency of the allocations processes would be improved if they were all integrated within NIBS and if the use of off system spreadsheets was reduced. We have also identified that NATS does not seem to be applying is own process in relation to market testing and arms-length pricing.

In relation to consistency over time we find that the current business plan is generally consistent with the costs recorded in the allocation systems (that is, recent actuals). Where significant changes in costs are apparent in the business plan there is a rational explanation for them; for example, in relation to increased expenditure in the Oceanic service line.

6.6. Application of rules

The terms of reference also ask us to consider whether the same rules are applied to costs allocated from NERL to affiliates as from affiliates to NERL. While we are able to say that the rules of cost allocation are applied consistently across all main areas of cost there are some areas within intercompany charging where we are unable to fully test for a consistent approach; for example, in relation to margins on particular ICAs.

6.7. Recommendations

Our recommendations are set out in each chapter but are also summarised Table 6.2 below:

Table 6.2: CEPA/BDO recommendations

	Area	Recommendations
2	Approach to cost	• Given the risk of error/misallocation arising from the use of

	Area	Recommendations
	allocation	off system spreadsheets we consider that it is appropriate to consider full integration of the system as part of the process of deciding how to address the end of life issue for the SAP BPS module.
3	Allocation of revenue and operating costs	We recommend that: • NERL undertakes some additional high level analysis into the costs of different workstation capabilities/ complexities to ensure that the scoring matrix is formed in as objective a fashion as possible. • NERL develops a process for updating the turnover drivers used for cost allocation in BPS, subject to it being a manageable task, to ensure that statutory and regulatory accounts are consistent. • As part of the process of next updating driver support files, greater rationale/explanation for the driver should be provided where limited explanation is currently available. • For driver variables which are currently considered constant over time (as forecasts are "not practical"), NERL consider whether simplifying assumptions could be made to ensure that forecasts for all drivers are variable over time. • On balance, further consideration should be given to replacing turnover with EPMU drivers. • NERL rename the 'Turnover – UKATS' driver (BIN25) as 'UKATS - External'. • NERL rename the "Income – Eurocontrol; MOD Shared Facs" revenue nominal account code
4	Allocation of capex costs	• LECG indicated a view that greater degree of transparency would be achieved by extending NIBs to fully incorporate capex. We agree with this view. Consistent with our recommendation in Chapter 1 we consider that the capex allocation process should be brought within the NIBS system. NERL has stated it will consider this when the time is right but will not change the system to accommodate it unless the benefits outweigh the costs.
5	Operation of intercompany agreement	• In relation to both MSAs and ICAs a lack of transparency, at a detailed i.e. individual agreement level, is the key issue that we identify. Overall it seems that intercompany trading is an area where there is established custom and practice but that

	Area	Recommendations
		this is not formally captured in any one place. • We consider that NERL should establish whether it is feasible to separate MSA costs from other costs within a given Business Area such that is can improve the accuracy of reports that depend on this information. • In relation to ICAs we recommend that NATS consider how the system might be developed to provide greater transparency. We also consider that NATS should ensure that is compliant with its own procedures to market test or where not possible develop and document the approach taken to arms-length pricing under its ICAs.

ANNEX 1 – RECONCILIATION BETWEEN THE REGULATORY AND MANAGEMENT ACCOUNTS

This annex contains a table showing the differences in accounting treatment between the Regulatory and Management Accounts.

	Financial year ending				
	31 March 2009	31 March 2010	31 March 2011	31 March 2012	31 March 2013
	£m	£m	£m	£m	£m
Operating Profit per NERL Finance Report (Management Accounts)	**112.3**	**92.3**	**124.0**	**200.9**	**205.3**
Rounding adjustment	(0.1)				0.1
NERL Operating profit per Group Finance Report	**112.2**	**92.3**	**124.0**	**200.9**	**205.4**
Rounding adjustment				(0.1)	
Adjustment to Ten-T revenue entitlement	(0.1)				
MoD Gainshare year end revenue adjustment	(0.4)				
Adjustment to bad debt provision	(0.3)				
Update to Eurocontrol revenue for actual traffic			(0.3)		
Update to Eurocontrol revenue for revised inflation forecast			0.1		
Revision to cost of employee share plan			(0.3)		
Accrual for late recruitment and legal invoices				(0.1)	
NERL Statutory Accounts Operating profit	**111.4**	**92.3**	**123.5**	**200.7**	**205.4**
Add:					
Charge for defined benefit pension scheme (excluding past service cost and salary sacrifice)	39.1	67.1	45.2	50.5	56.4
Net recharge from NSL and NATS for defined benefit scheme costs	(0.1)	0.7	0.6	0.6	0.5
Accounting depreciation charge net of deferred grant income	77.6	84.4	96.7	92.3	101.5
(Profit)/loss on disposal	(0.8)	0.0	0.3	1.0	0.0
Less:					
Regulatory depreciation (including backlog depreciation)	(107.7)	(115.0)	(129.4)	(145.3)	(159.2)
Pension cash contributions assumed by CAA	(33.2)	(30.8)	(31.3)	(96.1)	(96.7)
Immaterial gross up (0.5% of opex) of defined contribution pension costs which understates entitlement (to be adjusted 2013/14)				(1.2)	(1.9)
Adjustment to pension contributions for joiners since 1 January 2006 (CP2 only)	(3.8)	(5.8)	(8.6)	-	-
Rounding adjustment			0.1	0.3	(0.1)
Regulatory profit (UKATS and Oceanic combined)	**82.5**	**92.9**	**97.1**	**102.8**	**105.9**

	2012-13	2011-12	2010-11	2009-10	2008-09
Opex per Regulatory Accounts UKATS	337.6	338.3	343.6	345.7	386
Opex per Regulatory Accounts Oceanic	14.2	13.8	14.4	15.3	17.7
	351.8	352.1	358	361	403.7
Opex as per Management Accounts at Historic prices	**2012-13**	**2011-12**	**2010-11**	**2009-10**	**2008-09**
Eurocontrol	398.0	387.2	384.1	400.6	406.2
London Approach	28.0	27.4	22.1	21.6	23.7
N Sea Helis	7.7	7.5	6.7	5.7	5.5
MoD	34.1	34.9	37.1	36.4	37.1
Other external	5.2	6.2	7.6	4.7	1.4
Intra-group	14.3	12.1	14.8	16.4	18.6
Oceanic					
Total	**487.3**	**475.3**	**472.4**	**485.4**	**492.5**
Late adjustments post Mgt accts publication	0.0	0.1	0.4	0.0	0.9
Opex per Statutory Accounts	487.3	475.4	472.8	485.4	493.4
Add Oceanic	20.9	20.0	19.4	22.0	22.3
	508.2	495.4	492.2	507.4	515.7
Difference compared with Regulatory Accounts Opex as below	156.4	143.3	134.2	146.4	112.0
Reconciling items					
Charge for defined benefit pension scheme (excluding past service cost and salary sacrifice)	56.4	50.5	45.2	67.1	39.1
Net recharge from NSL and NATS for defined benefit scheme costs	0.5	0.6	0.6	0.7	(0.1)
Accounting depreciation charge net of deferred grant income	101.5	92.3	96.7	84.4	77.6
(Profit)/loss on disposal	0.0	1.0	0.3	0.0	(0.8)
Immaterial gross up (0.5% of opex) of defined contribution pension costs which understates entitlement (to be adjusted 2013/14)	(1.9)	(1.2)	0.0	0.0	0.0
Adjustment to pension contributions for joiners since 1 January 2006 (CP2 only)	0.0	0.0	(8.6)	(5.8)	(3.8)
Rounding adjustment	(0.1)	0.1		0.0	0.0
Total reconciling difference as above	156.4	143.3	134.2	146.4	112.0

ANNEX 2 – NATS COST ALLOCATION REVIEW – INITIAL INFORMATION REQUEST

Initial meeting with NERL 17th July 2013 to discuss	Purpose	Status 23 July 2013	NATS response
1. Group structure and the service contracts in place.	Background and information regarding the nature of the changes since the last review	High level covered – full list of service contracts in place now requested below (see 12 and 13)	Group structure already covered - List of service contracts is covered by items 12 /13 below. Completed as part of Q12/Q13 – Delivered 30/07 **Closed**
2. Activity coding structure 2.1. Coding structure and high level overview of the systems in operation/ their integration. 2.2. Are the cost/revenue allocation drivers (most commonly number of workstations and turnover) updated dynamically, how frequently and explain the process in operation?	Background and information regarding the nature of the changes since the last review	We understand that the coding structure is unchanged since the last review. Confirmed verbally by NERL. The cost drivers are subject to regular review (see 4 below) and are maintained clerically	Covered in initial presentation.

Initial meeting with NERL 17th July 2013 to discuss	Purpose	Status 23 July 2013	NATS response
		when they change. Confirmed verbally by NERL.	**Closed**
3. Reconciling statutory, regulatory and management accounts.	Background on the impact of cost allocation across these three outputs and information regarding the nature of the changes since the last review	We will consider this further as we examine the impact of allocations across the three formats of accounting output.	Provided as part of answer to Q16 – Delivered 30/07 **Closed**
4. Discuss recommendations made by LECG in 2009 and what action has been taken: 4.1. Full review of driver support files to ensure that all inputs are accurate and up to date 4.2. Improve driver support files so that they are easier to follow, review and audit, have explicit links to the primary evidence, and be reviewed at least annually.	Background and information regarding the nature of the changes since the last review	Recommendations have been addressed – the changes in practice need to be tested	Covered in initial presentation. **Closed**
5. Group accounting manuals/ any NERL accounting guidance on working practices.	Background and so that we may consider the reason for and impact of	NERL referred to "Note on use of guidance documents and list of	'Accounting guidance – question 5' sent 30 July 2013

Initial meeting with NERL 17th July 2013 to discuss	Purpose	Status 23 July 2013	NATS response
	any changes over the review period.	these documents" (this latter document was not received in the initial response)	**Closed**
6. Confirm differences between regulatory and statutory accounting policies – RAGs do not allow capitalisation of financing costs for capex (statutory accounting has adopted IAS23).	Background on the impact of cost allocation across these three outputs and information regarding the nature of the changes since the last review	Covered at a high level. Will be considered further during the review.	Covered in initial presentation. **Closed**
7. Allocation tables - has the cost/revenue allocation system evolved further since 2009 and if so what has changed?	Background and so that we may consider the reason for and impact of any changes over the review period.	There has been no change in methodology. Allocations methodology will be tested in practice.	Covered in initial presentation. **Closed**
8. Is the cost/revenue allocation system expected to change over the coming period and if so in what way?	Background		Covered in initial presentation on 17th July – confirmed by consultants in

Initial meeting with NERL 17th July 2013 to discuss	Purpose	Status 23 July 2013	NATS response
			telecom 26th July – no further information required at this point **Closed**
9. System demonstration and reports 9.1. We would like to know what standard system reports are available to illustrate the allocation of costs & revenue (allocation tables, before and after allocation control reporting, etc). Would there be merit in seeing a demonstration of the relevant reports being run and the options that may be set to vary the output? 9.2. From the LECG report, we note that you have previously maintained Driver Allocation spreadsheets. Assuming that these are still maintained, could these be made available for discussion at the meeting?	Background so that we plan the detailed testing to be undertaken.	Example screenshots were presented. It was agreed that this is best demonstrated via the system and we will add this to the agenda for the Swanwick site visit.	Schedule showing the list of all drivers Please confirm that the list of drivers covers all non workstation drivers and that all workstation drivers are included in the workstation Excel file now received. Support files for non-workstation drivers – support summaries – the supporting data is very detailed and can be reviewed on Friday 2nd as required (workstation drivers will be covered during visit on 2nd August) Schedule showing the "Top 12" – these represent 80% of the cost and showing the impact on cost over the last 4 years (prior to 4 years the drivers were in a different system so not easily comparable) The schedule however shows how the

Initial meeting with NERL 17th July 2013 to discuss	Purpose	Status 23 July 2013	NATS response
			drivers have changed Control logs within the system do not exist but agreed NATS would examples of the changes to drivers – schedule included '9.2A Full list of drivers 2012_13' '9.2B Driver allocation files – top 12 drivers' '9.2C Ranking of SL drivers' '9.2D Review dates top 12 drivers' Sent 30 July 2013 Closed

Further information request 23 July 2013	Purpose	Status	NATS response
10. **Staff numbers** - As of the latest available information 10.1. Staff numbers (employees including term contracts) by location. 10.2. External staff permanently co-located at NERL centres and their location and role 10.3. How are any associated NERL overhead costs relating to permanently co-located external staff handled?	To understand the locations that comprise NATS, the staff working at those locations and the number of non-NATS staff at these locations.		Analysis of staff by location and note on external staff. Part of pack for 02/08. 'Question 10 Staff Numbers' **Closed**
11. **Time-cost accounting** - We understand that all employees complete timesheets and that their time is charged at activity level within the NIBS system. Please provide: 11.1. An explanation of how time charging rates are set, how frequently they are revised, and how you ensure that costs (where appropriate) are charged at zero margin (including how premium pay	To understand the impact of time-cost charging (as the basis of cost allocation) across the service lines.		11.1 Note on how the Financial aspects of Activity Management works. 11.2 Table of current rates for each Work Centre. 11.3 Any labour under/over recovery is spread back to activities at year end – based on the hours allocated to those activities.

Further information request 23 July 2013	Purpose	Status	NATS response
scales such as overtime are charged). 11.2. The table of the latest charging grades and charging rates, indicating which are designed to add a margin for external charging. 11.3. How do you handle variances that arise from time-cost charging where original assumptions used to derive charging rates prove to be wrong? 11.4. For 2012/13, please confirm the value of services charged inclusive of any profit margin.			11.4 Included in pack of 30/07. 'Module 3 – Activity Management – for BDO – Q11' 'Work Centre Rates – Question 11' 'Table of Rates' **Closed**
12. **External service contracts (non intra group)** 12.1. What service contracts and service level agreements are in place and 12.2. a summary of changes over the last five years.	To understand the basis of charging and revenue under external service contracts.	CEPA Consortium observation – response does not include a current list of all external contracts and summary of changes over the last five years	Overview of External Business Reporting 12.1 Overview of FY 12/13 Income has been provided. 'Overview of external business reporting' 'MMW revenue analysis by year'

Further information request 23 July 2013	Purpose	Status	NATS response
			Sent 30 July 2013 **Closed**
13. **Intra group services (Management Services and Intra-group Agreements)** 13.1. What service contracts and service level agreements are in place and 13.2. whether any intra-group charging is not governed by these agreements, 13.3. how charging is approved and governed, and 13.4. a summary of changes over the last five years. 13.5. Please provide an analysis of inter-company revenue and costs by service line for each of the last five years.	To understand the basis of charging and revenue under intra-group service contracts.		13.1 List attached 'Allocation of Corporate Costs July 2012' 'Inter-company trading – NSL and NATSNAV – 16 June 2009' 'Inter-company trading – NERL and NATSNAV – 4 June 2009' 'Inter-company trading – NERL and NSL – 16 June 2009' 'NATS and NERT intercompany secondment agreement 1 October 2009' 'NATS and NSL intercompany secondment agreement 1 October 2009' 'NERL and NSL intercompany management services agreement 1

Further information request 23 July 2013	Purpose	Status	NATS response
			October 2009' 'NATS and NERL intercompany management services agreement 1 October 2009' 'NERL and NSL intercompany trading agreement 1 October 2009' 'NATS and NSL intercompany trading agreement 1 October 2009' Also NATS and NSL Inter-company Management Services Agreement 1 October 2009 'PP05ICT intercompany trading' 'MMW inter co charges by year' Sent 30 July 2013 **Closed**
14. **Capex** - Please provide a list of all significant (value to be confirmed by discussion) capex projects over the last five years, their duration and amounts capitalised in each year. 14.1. Confirmation of what in	To understand the basis of and consistency of capitalisation practices.	NERL response to 14.4 states '*See separate paper outlining the relevant accounting standards adopted by NERL, its processes, procedures and governance*	Included in the pack for 02/08. 'RP2 Cost Allocation Review Question 14'

Further information request 23 July 2013	Purpose	Status	NATS response
CP3, was the basis (projects and their expected value) of arriving at the planned capex element. 14.2. How did the actual capex project costs compare with the plan and an explanation of any variance and its impact on the NATS outturn against its allowance. 14.3. Please confirm whether any projects that were expected to be opex activities have been reclassified as capex. 14.4. Please explain the governance process over capex projects (e.g. restrictions over who may charge to capex project activities and how the amount to be capitalised is determined at the point of completion/ commissioning). 14.5. Please provide an analysis of the variance from CP3 plan of capitalised labour by year from 2008/9 to 2012/13 separating 1. The capitalised element relating to projects not envisaged at CP3, 2. own staff time capitalised cost,		*environment.'* We do not believe this has been provided.	

Further information request 23 July 2013	Purpose	Status	NATS response
3. capitalised contractor labour, 4. other with an explanation of what this relates to. 14.6. Does the CP3 business plan include any opex contingency for long term investment plan and if so how and when has this been released and for what purpose?			**Closed**
15. **RIM -** An explanation of the key areas of out-performance under the rolling incentive over the last four years.	To understand the reason for out-performance under the RIM.		Included in the pack for 02/08. 'Question 15 RIM' **Closed**
16. Management accounting - Copies of the end year management accounts for the last five years and, if available, how these may be reconciled to the statutory and regulatory accounts.	To understand the management accounting information utilised for day-to-day management of the business and how this relates to published regulatory and statutory accounting information.		Management Accounts for 5 years 'NBT report 2009-2013' Sent 30 July 2013

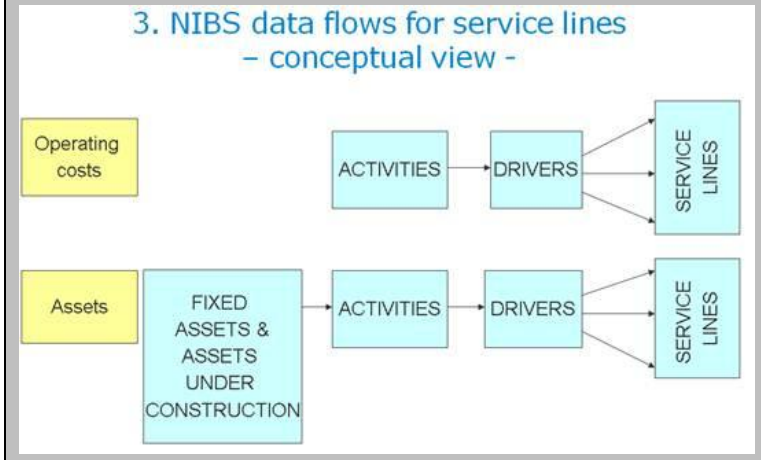
Further information request 23 July 2013	Purpose	Status	NATS response
			Reconciliation to Statutory / regulatory accounts 'NERL Mment Account to Regulatory Profit Rec 2009-13 Sent 30 July 2013 **Closed**
17. **Budgeting cycle** 17.1. Explanation of the budgeting cycle and how this is finalised/ baselined for regulatory purposes and financial and management accounting. 17.2. Please confirm whether any revisions were made to the budget after baselining and why. 17.3. Explanation of the basis of the planned allocation that was applied to the final baselined budget in each of the last five years and whether these are the same as the CP3 planned	To understand the budgeting cycle, the underlying cost and revenue allocation assumptions, and the impact of any changes over the period under review.		Included in the pack for 02/08. 'Question 17 (Budgeting Cycle)'

Further information request 23 July 2013	Purpose	Status	NATS response
allocations. 17.4. What was the basis of the actual allocations and the reasons for the variances. 17.5. Explanation of the basis of the planned allocation that has been applied in the RP2 business plan and how this differs from the basis applied in the CP3 business plan and actuals and why. 17.6. Whether any major changes are expected in RP2 that could impact the basis of allocation.			**Closed**
18. **Transfer of costs** – Have any costs (or revenues) been transferred between activities or service lines other than via the allocation (and time costing) routines (e.g. by GL journal)? If yes, please explain in broad terms why this has been necessary and the impact in each of the last five years.	To establish whether any overall adjustments have been made to the systematic methods of allocation of cost and revenue.		Any adjustments on journals are posted within the NIBS/SAP system and so reflected in the data upon which any cost/revenue allocations are made. **Closed**
19. **Independent reviews** - Copies of	To be aware of any relevant		Review of process/model done by

Further information request 23 July 2013	Purpose	Status	NATS response
any independent reviews of cost allocation undertaken in the last four years?	external reviews of cost allocation undertaken since the last review.		PwC but consultants advise this is not required. **Closed**

Further queries and information request 5 August 2013 following Swanwick meeting 2 August 2013	Purpose	Status	NATS response
20. Please confirm that all information provided in the initial response to the information request is stated in historic prices.	Clarification		Confirmed **Closed**
21. Please explain the differences between Annex 3 of the NERL Business Review Finance Report March 2009 and Table 3-1 on page 20 of the LECG report (£0.6m at Income line and £0.3m at operating cost line giving £0.9m at operating profit/ loss line).	Clarification		Reconciliation provided **Closed**
22. Para 4.1 on Page 5 of the NMS:NATS-Wide Inter-company Trading & Pricing Policy refers to market testing of related party transactions. Please explain what market testing has been carried out over the last five years.	Confirm compliance with policy		Superseded by restated query below
23. The Excel file 'Summary List of drivers TOP12' agrees to the Operations and NERL Business Review in total. Please explain how the EBIT line on 2.5 (page 16 of the FNERL Business Review	Clarification		Reconciliation provided

Further queries and information request 5 August 2013 following Swanwick meeting 2 August 2013	Purpose	Status	NATS response
relates to the EBIT line on page 17 of the same report.			**Closed**
23. How are balance sheet values handled through the allocation model? 23.1. Are costs collected at capex activity level allocated 100% to the appropriate legal entity (and if so using which drivers) or are non P&L values handled though a means other than cost allocation? 23.2. Are there any intra-group charges for capex items and if so, please provide this information for the last five years (in the same format as the Intra-group spreadsheets for P&L amounts already provided)?	Clarification		Superseded by restated query below
24. The Powerpoint file 'Allocation of Corporate Costs July 2012' refers to the approval of the planned intra-group charging for the year. We assume that actual charges are based on actual costs. How is the variance to actual approved?	Clarification		Any variation is approved via the review of the overall performance against plan **Closed**

NATS Cost Allocation – Questions for discussion 2 September 2013	**As discussed –** *Closed or* **Remaining unresolved –** NATS response
1. Asset accounting – the response to Q23(2) requires some further clarification. Answer *Fixed Asset values are used in the Regulatory Accounts process. These are outside the costs model (BPS) but follow the same principles - i.e. assets linked to activities with drivers applied. Other Balance Sheet items are no longer used.* In the initial meeting the following diagram was presented:  	
a. Are fixed assets allocated by service line or merely to UKATS and Oceanic as required by the RAGs?	*By service line within an off-system spreadsheet which takes asset values from the SAP asset module and allocates the assets using the same activity drivers that are applied to opex. This assets allocation spreadsheet is an input to the regulatory spreadsheets that take the service line allocated costs and revenue (out of BPS) to derive the regulatory accounts.* **Closed**

Further queries and information request 5 August 2013 following Swanwick meeting 2 August 2013	Purpose	Status	NATS response
b. Does this allocation of assets for regulatory purposes occur in the General Ledger and if so how is this achieved? If not where does this occur and how is this achieved?			*See 1a above* **Closed**
c. Please provide a listing of all the drivers utilised in allocating fixed asset for regulatory purposes. If these are not the same as those used for opex please also provide the allocation ratios applied.			**NATS to confirm how often the asset allocation process operates in the course of a year and provide the end year asset allocation spreadsheet for 2012-13.** The process is run once per year now as an input to the Regulatory Accounts (note when this analysis formed part of the Statutory Accounts it would have been done twice per year for Year end and Interims) To answer the question we are sending the e mail which provides the set of drivers. These are the same drivers as used in the BPS Regulatory Service Line model. (ref Yr End Info – 10.04.13) These are then used in an Excel workbook to achieve the Regulatory Service Line Fixed Assets analysis which in turn supports the regulatory Accounts process (ref NAT2_Mar_13_Reg_SL_Asset.xlsx) **Closed**
d. Is there any correlation between the drivers used for BPS cost allocation and those for regulatory asset allocation? If so, how do you ensure that the GL allocation between UKATS and Oceanic is consistent with the basis of the drivers used within the service line			*They should be one and the same and should be maintained at the same time and by the same people to encourage consistency* See 1c above

Further queries and information request 5 August 2013 following Swanwick meeting 2 August 2013	Purpose	Status	NATS response
model?			**Closed**
e. Is the asset register held within SAP utilising an asset accounting module? Is this utilised for the RAB as well and if not what is used for the RAB?			*Yes for asset register no for RAB which is effectively held in the off system spreadsheets with the detail held at pre allocation level in SAP.* The Asset Register is in SAP Fixed Asset module – the asset data used for the RAB is taken from this module and split by Regulatory Service Lines as in 1c above – we do not hold a separate RAB asset register **Closed**
f. Is depreciation for statutory accounts purposes derived by an SAP asset module and posted against activities for allocation through the BPS? If not how is this handled?			*Yes and coded to activities and allocated like any other opex cost* **Closed**
g. How are assets under construction handled within the fixed asset system?			*This is handled within the SAP asset module and assets will not be transferred to the RAB until they are complete and commissioned* **Closed**
h. Are any indirect costs arising from the BPS cost allocation capitalised and if so how is this achieved given that the allocation occurs at G/L level prior to the BPS cost allocation?			*No. If it is deemed appropriate to capitalise any indirect costs (e.g. allocated HQ or parent company costs) they would have to be journalised to the asset activities in SAP (we understand that no internal invoices are raised for intra-group transactions which are all accounted for via SAP journals (uploaded Excel spreadsheets representing how the intra group transactions should be accounted for.*

Further queries and information request 5 August 2013 following Swanwick meeting 2 August 2013	Purpose	Status	NATS response
			Closed
i. Are any fixed asset costs passed through the BPS?			*No other than depreciation charges for the year (and profits/ losses on disposal of assets)* **Closed**
2. Our understanding is that the output of the SAP Business Warehouse is capable of reporting the cost information (plan and actual) utilising a range of parameters including driver versions and report types. The output of allocated costs represents part of the accounting records of the group and feeds off-system spreadsheets utilised for the final adjustments required to produce the statutory and regulatory accounts. Please provide copies of the 2012-13 spreadsheets utilised for regulatory accounting purposes.			Discussions at 1 above confirmed that the regulatory accounts are derived from off system spreadsheet(s) that take the asset allocations as an input to the process and which effectively represent the RAB. For this reason we would like to have sight of these spreadsheets. NATS to provide. Attached a spreadsheet which shows the input into the capex part of the Reg Accounts RAB, together with all the detailed back-up as provided by the Central Finance Team (Q 1c refers). It links through to the relevant tabs and should be self-explanatory. (ref Reg Accounts RAB.xlsx) **Closed**
3. We have reflected on our initial decision not to request sight of the internal audit report on the NIBS cost allocation system. We feel that we should review the report and its findings for CAA and would be grateful if you would seek permission from the internal auditors to release this to CEPA.			**NATS will arrange for the internal auditors to liaise direct with CEPA.** Contacted internal auditors 2/9 and contact now established between CEPA and internal auditors. **Closed**
4. Intercompany agreements – response to Q24 requires further clarification. Answer *For NAT1 MSA charges to NERL & NSL, it is the drivers which are approved and this set of percentages is applied to the actual costs. Any NAT1 cost variances between*			

Further queries and information request 5 August 2013 following Swanwick meeting 2 August 2013	Purpose	Status	NATS response
plan and actual are approved during the year as part of the normal review process – Business Areas are reviewed each month and forecast for the rest of the year are updated accordingly. *For NAT2 MSA charges from NERL to NSL, the charges are fixed for the year. As part of the Business Planning process, there is a lengthy challenge and review where the level of services to be provided and the price to be charged are negotiated and finally agreed between the respective MDs of NERL and NSL. If any variances were to occur during the year, these would be approved during the normal review process, as described above. E.g. last year there was a minor variance on the charge from Finance which related to the provision of ATCO Licences – this is an external cost paid to SRG by NERL covering both NERL and NSL ATCOs and will obviously vary depending on the respective number of ATCOs.* Additionally you have provided us with (1) annual management approvals (unsigned) of the allocation of corporate costs for 2012-13 for NATS to NERL and NSL and also for NERL to NSL, and (2) the same schedules unsigned for 2013-14. In the answer above you state that it is the drivers that are being approved but these schedules actually show planned costs to be charged rather than driver information.			
a. If these MSA schedules represent simply confirmation that charges will be at cost "using a fair allocation of costs based on the most appropriate drivers for the activities" is there (i) any formal management approval of intra group allocation of MSA charges? (ii) Please confirm that MSAs are the result of the allocation of actual costs.			**NATS to respond to 4a (i) and 4a (ii)** The schedule previously provided represents the formal management approval. It is the formal sign-off of a set of planned intercompany costs derived from applying an approved set of drivers (mainly Turnover) to a planned set of NAT1 activity costs. The approved drivers are then applied to the actual NAT1 activity costs which arise during the year.

Further queries and information request 5 August 2013 following Swanwick meeting 2 August 2013	Purpose	Status	NATS response
			Prior year data is provided for information only. **Closed**
b. For the MSA sign-off sheets showing type of description and planned cost amounts compared with actual costs allocated for the previous year, may we have the allocation drivers that have been applied to derive those allocated costs (for 2012-13) please?			**NATS to provide** Spreadsheet is attached which show the allocation drivers applied to FY12/13 NAT1 activity costs (ref FY1213 Central Driver Information NAT1.xlsm) **Closed**
c. No approval documentation has been provided for Inter-company charges (under the inter company agreements) which we understand take the form of Inter-company trading forms. Are these forms still utilised to approve charges? If so may we review these forms to confirm that approval has been given and to understand what level of management is approving the expenditure? Once approved, are intercompany charges accounted for via invoices raised between the entities within the group. Are these charges always in line with the agreed intercompany trading forms? Do variations occur and is subsequent approval given for any variation? Please also explain the difference between intercompany trading and intercompany secondment agreements.			*As explained above, all intra group transactions are accounted for via SAP journal and no internal invoices are raised.* **Together with this note of the meeting are two of the ICAs provided originally (see 4e below). Other than totals of intra group trading by year this is all that we believe we have been provided for ICAs. NATS to confirm that the list of ICA agreements (with agreement number and planned and actual amount of traded activity) exists and will be provided to the CEPA Consortium.** List to follow before 6/9 **Closed**
d. We understand that intercompany charges are included in a register of charges. May we have a copy of the register showing the			*As 4c above*

Further queries and information request 5 August 2013 following Swanwick meeting 2 August 2013	Purpose	Status	NATS response
agreement numbers for each item, the budgeted cost and the actual cost for the latest year 2012-13?			**Closed**
e. Finally please explain the difference between the following agreements: **(i) Inter Company Trading - NERL and NSL - 16 June 2009 and** **(ii) NERL and NSL Inter Company Trading Agreement 1 October 2009**			**NATS to explain** The second is an updated version of the first **Closed**
f. You have provided a schedule of inter-company capital transactions in Q23 (2). **Do these transactions fall under the same agreements and processes?**			**NATS to explain** Yes **Closed**
g. In the further response to Q12 you provided spreadsheet "MMW revenue analysis by year incl contracts" showing margins for external and intercompany contracts for NERL. The inter company revenue relates to what has previously been described as "Business Development" and excludes MSAs, which we assume are charged at cost, and Other revenue. **Please explain what the other revenue relates to.**			**NATS to explain** Other revenue comprises: Provision of Luton & London City Approach services from Swanwick (FY 09/10 and 10/11 only – thereafter these were no longer treated as Inter Co but incorporated into the London Approach Revenue)

Further queries and information request 5 August 2013 following Swanwick meeting 2 August 2013	Purpose	Status	NATS response
			Provision of Biggin Hill Approach services from Swanwick (circa £0.1m every year) Provision of training from T&S – mainly relates to Trainee Controllers **Closed**
h. In the earlier response to Q12 you provided spreadsheet "MMW Inter Co charges analysis by year" which shows charges from NATS and NSL. **Please indicate what profit margin is included within these charges and the basis of arriving at the margin.**			**NATS to provide** For charges from NATS (i.e. NAT1) there is no profit margin. It is simply the costs which are charged out to NERL and NSL. For charges from NSL, we do not have access to NSL margins – these should be considered "out of scope". However, the basis follows the Inter Company Trading & Pricing Policy. **Closed**
5. Please provide, for 2012-13, a list of all activity codes/ descriptions and the driver codes associated with them. Please also provide a narrative of how to interpret the four component elements of the activity code.			**CEPA Consortium to confirm that this has already been provided in the form of a large spreadsheet and Powerpoint training presentation on activity based management** **Closed**
6. Please see the attached spreadsheet "Capex to opex ratios and sources/			**NATS to provide**

Further queries and information request 5 August 2013 following Swanwick meeting 2 August 2013	Purpose	Status	NATS response
reconciliations.xlsx" where we have attempted to derive the **opex to capex ratio for the regulated businesses based on information extracted from the regulatory accounts. Please confirm that these historic ratios are correct.** Please also provide the **reconciling items to agree the regulatory opex with the statutory/ management accounts opex** shown at the foot of the spreadsheet.			The reconciliation of the Management to Statutory to Regulatory accounts was provided as an answer to Q 16 in the earlier delivery of information **Closed**
7. Please provide a copy of the MOD internal audit report from 2007/8 which LECG reviewed in their 2009 report.			**NATS to provide** The audit report was restricted under the contract – we are checking to see if we can make it available **Remains open**
8. Please provide an example of recent market testing activity used to support pricing of intercompany trading. Please also provide a recent example of the material used to support cost plus pricing for these agreements.			**NATS to provide** As previously stated it " As NERL has no direct competitors in the UK market there are some challenges in performing market testing of individual contracts". **Closed**
9. You have explained that the service lines % split for workstation drivers is adjusted based on a "capability weighting" and you have helpfully provided some rationale for the weightings (see kick-off meeting presentation). Could you now provide some additional reasoning behind the scoring matrix as contained within the workstation driver model (see below). Given			CEPA Consortium to confirm that this has already been provided in the form of the rationale tab in the driver spreadsheet The rationale tab does provide a rational for the scoring matrix. We note in the

Further queries and information request 5 August 2013 following Swanwick meeting 2 August 2013	Purpose	Status	NATS response
that criticality is a matter of judgement, we feel that it is important to understand the assumptions.			report that this rationale is useful (it is certainly an improvement on previous weightings), although it retains an aspect of subjectivity. **Closed**

Value criteria	ATCO Utilisation	ATSA/Support staff Utilisation	Power Y/N	Auto-Triangulation Display Y/N	EFD/EDDUS Y/N	Ifacts Y/N	TOMS Y/N
Scoring	5	4	1	4	4	5	2
Value criteria	BURT/AAS Y/N	Multilat Y/N	OPM input required Y/N	Radar Service Y/N	A/G Channels Y/N	G/G Lines Y/N	Flight data present Y/N
Scoring	5	5	1	5	5	5	4
Value criteria	Support information screens Y/N						
Scoring	2						

Further queries raised via email 10 September 2013	Response
1. Thank you for your help with these queries. In comparing the original workstation driver file that you provided after our initial Swanwick visit we note that while most of the driver percentages matched the asset allocation spreadsheet, there were discrepancies and we attach the driver file for clarifications to why is the attached supporting workstation driver file not in line with what is used in the system (we understood that this was the model for 2012/13).	One set of drivers (asset allocation spreadsheet) is 2012/13 and the other (the latest version of the driver model spreadsheet) is 2013/14 **Closed**
2. Also in advance of the initial Swanwick visit you provided a number of supporting spreadsheets for major drivers. I attach the BIS02 file which showed Oceanic receiving 3.73% of costs whereas the BPS and asset allocation spreadsheets show 3.25%. Why were the percentages as per the	As 1 above the differences are due to one being 2012/13 and the other 2013/14

Further queries raised via email 10 September 2013	Response
supporting file for this d river not used in practice?	**Closed**
3. We should apologise for our error in Q1 in the email below which resulted from sorting a sub-set of the data. We can now see that the information is fully consistent.	No response required **Closed**
4. Is it possible to trace the intra-group asset information in Q23(2) 23.2 Summary of inter-co capex projects 2008-13 to the NAT2_Mar_2013_Reg_SL_Asset spreadsheet attached (I assume not unless this is related to the credits referred to above)?	The inter group information we gave you previously was historic and so covered several years – the information for the year in question is included **This remains open**

Further queries raised at meeting on 18 September 2013	Response
Please provide a sample of cost data for MSAs and ICAs within BPS, for individual activity lines	Information provided by NATS on 20th September (identification of some cost lines relating to ICAs within BPS, as well as the charges from NATS for providing services to NERL and NSL). **Closed**
Please provide any additional data to explain the costs for ICAs and MSAs within BPS.	Information provided by NATS on 20th September (models showing bottom up costs for a sample of MSA and ICAs). **Closed**
Please provide detailed data to explain the revenues for ICAs and MSAs within BPS.	Information provided by NATS on 20th September (models showing breakdown of revenue for two ICAs).

Further queries raised at meeting on 18 September 2013	Response
	Closed
Please provide the driver support files for BIN28 and BIN29	These two driver support files were provided by NATS on 20th September **Closed**

Further queries raised 24 September 2013	Response
In response to Question 14 of the initial information request, a paper on capex outturn against allowance was provided. This included the following tables. Please confirm the price basis that applies to this information.	

Table 4.6 Capex by SIP category for CP3

Programme	11/12 £m	12/13 £m	13/14 £m	14/15 £m	Total CP3 £m
Airspace Development	6	6	4	5	21
Centre Systems Software Devt	26	24	23	17	90
CNS Infrastructure	28	25	21	14	88
CO2 and Fuel Saving	0	0	2	12	14
Development of SAATS	1	3	1	1	5
Facilities Management	12	9	4	4	28
INCW at TC & PC	0	3	13	20	36
iTEC FDP	42	49	42	15	148
NCW at all NERL Centres	0	2	14	17	33
Risk and Contingency	2	5	7	11	25
RSS	18	10	2	0	30
SNets and Airspace Efficiency	4	11	14	16	45
Grand Total	**138**	**148**	**147**	**131**	**563**

Source NERL response to Question 14 updated to constant prices

and

Table 4.7 Actual capital expenditure compared with planned expenditure

Further queries raised 24 September 2013	Response

Programme	Actual 11/12 £m	CP3 Plan 11/12 £m	Actual 12/13 £m	CP3 Plan 12/13 £m	Variance Both Years £m
Airspace Development	3.9	5.8	5.1	5.6	(2.4)
Centre Systems Software Devt	39.7	26.4	37.8	24.5	26.6
CNS Infrastructure	22.8	27.6	25.6	25.2	(4.4)
CO2 and Fuel Saving		-	0.0	-	0.0
Development of SAATS	1.7	1.2	1.3	2.6	(0.9)
Facilities Management	6.1	11.7	5.6	8.7	(8.8)
INCW at TC & PC		-		3.1	(3.1)
iTEC FDP	30.5	41.7	29.8	48.8	(30.2)
Military	0.6	-	5.3	-	5.9
NCW at all NERL Centres		-		2.5	(2.5)
Risk and Contingency		2.0		5.4	(7.4)
RSS	17.1	17.6	6.0	10.3	(4.8)
SNets and Airspace Efficiency	3.7	4.2	2.9	11.0	(8.6)
Grand Total	**126.0**	**138.3**	**119.4**	**147.6**	**(40.6)**

Source NERL response to Question 14 updated to constant prices

This remains open

The graph below shows "EBIT margin" figures from the management accounts. It shows (i) NERL overall, and (ii) ICAs with NSL. My understanding is that the **REDACTED** figure for NSL in 2008/09 (below) relates to the value of services provided from NERL to NSL compared to the value of services in the opposite direction. Therefore, it simply relates to the value of ICA contracts in both directions, and does not mean that revenues exceed costs for the services that NERL provides to NSL. This is important for when we discuss the margin on ICAs.

Please could you confirm this understanding? Thank you.

REDACTED

Explanation provided by NATS in document entitled "Follow up query on ICAs".

Further queries raised 24 September 2013	Response
	Closed
Pricing Model Query - The margins within this [NATS Pricing Model] spreadsheet seem very small, **REDACTED** (see "profit margin" in the "summary" worksheet). Is there an explanation, as we would expect them to be higher? - My understanding is that the NATS pricing model allocates overhead costs (i.e. "own asset charge") to particular activities (i.e. ORRD). However, these overheads do not seem to be allocated to these activities within BPS, as shown by the very large margins (which are pre-overhead costs). If this understanding is correct, why are overhead costs not allocated to activities within BPS? - Is the NATS pricing model a feeder model for BPS?	Explanation provided by NATS in document entitled "Pricing Model Query". **Closed**

ANNEX 3 – TESTING THE ALLOCATION OF OPERATING COSTS AND REVENUES

In order to test the allocation of operating costs and revenues through the main NIBS system we carried out a series of test. Details of each are provided below.

Test 1 - Driver percentage split between service lines

To check whether the driver percentages are correct, we considered the majority of turnover and workstation drivers to test whether we think they have been correctly calculated and are feeding through correctly into the system.[49]

(A) Turnover Drivers

Under Test 1, firstly we have considered the turnover drivers. The aim of this test is to consider whether there is any variation between:

- the percentage allocation between service lines within the turnover drivers; and
- the percentage of total turnover attributed to each service line in the management accounts.

In theory, these two should be the same i.e. the turnover drivers should be making allocations that are the same as the percentage split in NERL's turnover by service line. If these are not the same there could be some inconsistency in the allocation modelling.

To undertake this test, we compared the service line percentage split in the allocation model turnover drivers versus the breakdown in 2012/13 turnover for the relevant service lines (based on the 2012/13 management accounts). The variances between the two are shown below in TableA3.1 below.

[49] We have not undertaken a review of 'other' drivers (none of these are within the top 10 drivers for 2012/13).

Table A3.1: Variance in turnover driver percentages (2012/13 allocation system versus 2012/13 management accounts) (variance in percentage points)

		Costs in 12/13 (£m)	EC	LA	MoD	NSH	NERL to NSL	Other	OC	Net total
BIN21	Turnover - Eurocontrol and MoD Share	-0.1	0.71%	0.00%	-0.71%	0.00%	0.00%	0.00%	0.00%	0.00%
BIN23	Turnover - Eurocontrol, MoD, Oceanic	2.5	0.61%	0.00%	-0.69%	0.00%	0.00%	0.00%	0.09%	0.00%
BIN24	Turnover - NERL Total External	31.2	0.07%	0.11%	-0.69%	-0.01%	0.00%	0.47%	0.05%	0.00%
BIN25	Turnover - UKATS	0.2	0.14%	0.11%	-0.72%	-0.01%	0.00%	0.48%	0.00%	0.00%
BIN26	Turnover - NERL Civil Excl Svcs to NSL	0.0	-0.59%	0.10%	0.00%	-0.02%	0.00%	0.48%	0.03%	0.00%
BIN27	Turnover - NERL Excl NSL and NS Helis	36.1	0.07%	0.11%	-0.71%	0.00%	0.00%	0.47%	0.05%	0.00%
BIN28	Turnover - NERL Excl NS Helis	3.0	0.38%	0.11%	-0.67%	0.00%	-0.35%	0.47%	0.06%	0.00%
BIN29	Turnover - NATS Wide Excl NS Helis	2.9	*tbc*	*tbc*	*tbc*	*tbc*	*tbc*	*tbc*	*tbc*	
BIN30	Turnover - NERL Excl MoD, NS Helis, NSL	5.2	-0.61%	0.10%	0.00%	0.00%	0.00%	0.49%	0.03%	0.00%

Source: Data from NERL (2012/13 allocation system costs and 2012/13 management accounts)

Key:

- Positive numbers (shaded red): The service line is allocated more cost in the BPS allocation system than we would expect it to receive based on the turnover split in the 2012/13 management accounts.
- Negative numbers (shaded green): The service line is receiving less cost in the BPS allocation system than we would expect it to receive.

Based on Table A3.1 we observe that most variations are less than one percentage point. Given that NERL's 2012/13 costs are £508m (as per the management accounts), a variation of one per cent is ±£5m. Although this is not particularly large in the context of NERL's total opex, it is potentially be significant for the smaller service lines. The variations generally increase the cost allocation to EC and 'Other external', and reduce the allocation to MoD and intercompany (NERL to NSL).

We posed several queries to NERL based on some our observations. From discussion with NERL, we understand that variances are to be expected because business planning processes need to use the drivers "some 3-6 months" in advance of the date at which the final turnover figures are available (i.e. in June). Therefore, the percentage splits in the drivers are based on the latest turnover forecasts available at the time of business planning. Differences between the 'latest forecasts' and 'final actuals' create variances, the magnitude of which are dependent on the general accuracy of the forecasts.

Whilst this is an intuitive explanation, we initially considered that it would be appropriate to update the historic driver percentages once final turnover figures become available. Having discussed this issue, NERL state that they do not do this because any impact on the BPS cost allocations would be irrelevant (as the management accounts are used on a forward-looking basis).

Whilst we appreciate that there is limited value for NERL in having a more accurate view of the management accounts ex-post, we understand that the BPS cost allocations are also used to drive the statutory and regulatory accounts. Therefore, by not updating the drivers ex-post, it creates some (relatively small) inaccuracies in the statutory and regulatory accounts, based on any costs which have been allocated using turnover drivers. The impact of any inaccuracies is however likely to be relatively small. As shown in Table A3.1 above, the greatest variation would be roughly £250k, based on the impact of the BIN27 driver on the MoD service line.[50] Therefore, updating will only be worthwhile if it can be achieved relatively straightforwardly.

Therefore, we recommend that NERL consider further whether there is a case for updating driver percentages to take account of the differences between actual and forecast data.

The largest variances are for the 'Turnover – UKATS' driver (BIN25). Our understanding is that 'NERL to NSL' is part of UKATS (as shown earlier in Figure 1.2), so this driver should allocate some costs to the 'NERL to NSL' service line. However, in the allocation model, NERL does not allocate any costs to the intercompany ('NERL to NSL') service line, hence the variation of -2.68%. Having discussed this issue with NERL, they clarified that the driver is not intended to drive intercompany costs, and so might be better named "UKATS external". We would recommend making this simple update to increase transparency.

We also queried the 'Turnover – NATS wide excl NS Helis' driver (BIN29). The service line percentage split in NERL's cost allocation system has a significant allocation towards the 'NERL to NSL' service line (27.6%). Initially it was not immediately clear why this driver is not the same as the 'Turnover – NERL excl NS Helis' driver (BIN28), which only allocates 2.3% of costs to 'NERL to NSL'. Having discussed this issue with NERL, and having received the driver support

[50] £36.1m x 0.71% = £255k

files for BIN28 and BIN29, we are satisfied that the explanation is that the NATS-wide driver (BIN29) is based on total NATS turnover (i.e. including all of NSL's revenue, not just NERL's revenue). Although a minor point, we would recommend some additional explanation in the support file to assist the audit trail, as currently the driver allocation percentages are simply linked to NATS' internal systems without being referenced.

(B) Workstation Drivers

Under Test 1, we also considered the workstation drivers. For a sample of drivers, we checked whether the workstation driver model (an offline spreadsheet) is feeding through correctly into the allocation system i.e. whether the percentage split in the drivers within the workstation driver model are the same as the cost allocation by service line within the BPS allocation system.

Table A3.2 below shows there are no variances in the workstation driver percentages between the drivers in the 2012/13 allocation system and the 2012/13 drivers in the 2013/14 workstation driver model i.e. the workstation driver model is feeding into the BPS allocation system accurately.

Table A3.2: Variance in workstation driver percentages (2012/13 allocation system versus 2012/13 workstation driver model) (variance in percentage points)

		EC	LA	MoD	NSH	NERL to NSL	Other	OC	Net total
BWS20	Workstations NERL WIDE - all Service lin	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
BWS22	Workstations NERL WIDE - non Ocean	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
BWS30	Workstations SWANWICK - total	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
BWS31	Workstations SWANWICK - total non MOD	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
BWS33	Workstations SWANWICK - AC	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
BWS35	Workstations SWANWICK - TC	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Source: Data from NERL (2012/13 cost allocation system and 2013/14 workstation driver model)

Key:

- Value of 0% (no shading): The service line is allocated the same costs in the BPS allocation system as would be expected from the percentage split in the workstation driver model.
- Positive numbers (shaded red): The service line is allocated more costs in the BPS allocation system than it would be expected to receive based on the service line split in the workstation driver model.
- Negative numbers (shaded green): The service line is allocated fewer costs in the BPS allocation system than it would be expected to receive based on the service line split in the workstation driver model.

Test 2 - Application of drivers within the allocation system

To consider the application of drivers within the system we have re-run the cost allocation between service lines for 2012/13. To do this we took NERL's cost data at the most granular level, noted the driver which NERL had applied to it in the system, and then allocated the costs by service line based on the driver percentages for 2012/13.

We found that there were a few very minor errors e.g. where the percentage split between service lines was not consistent with the percentage split for the particular driver. However, these errors only occurred for lines containing a very low level of cost, and we found that the costs in NERL's system under each service line were correct to within £1 (one GBP). There is therefore evidence that costs are being appropriately allocated in the sense that the correct driver percentages are being applied within the allocation system.

Test 3 - Workstation driver adjustments

As discussed in Chapter 3 of the main report, the workstation drivers are developed in the following process:

- Determine the number of workstations in each operations room and including their capability (systems configured for each workstation) and usage (workstation used by ATCOs or ATSAs)
- Taken together this information allows NATS to determine the proportion of workstations relevant to each service line

As part of our analysis, we have calculated the variation in the service line percentage split between the proportions both *before* and *after* this capability weighting. The results are shown in Table A3.3 below.

To provide some explanation for Table A3.3, all figures are shown as percentage point changes. A negative number indicates that the allocation percentage under the 'weighted' approach is a certain number of percentage points lower than the allocation percentage under the 'unweighted' approach. Where the costs allocated to a particular service line are lower under the 'weighted' approach, the cell is shaded green for clarity (and vice versa, with red shading to indicate higher costs).

Table A3.3: Variation in workstation driver percentage splits under 'adjusted' approach (percentage points, 2012/13)

		NATS (EN ROUTE) PLC						
			UKATS					
			En route (UK) Business			Other permitted business		
							Other Services	
Driver no.	**Driver description**	**OC**	**EC**	**LA**	**NSH**	**MoD**	**To NSL / NATSNav**	**Other external**
BWS20	Workstations NERL WIDE - all Service lines	-3.0%	0.3%	0.8%	0.0%	1.9%	0.0%	0.0%
BWS21	Workstations NERL WIDE - non MOD	-3.4%	2.3%	1.1%	0.0%	0.0%	0.0%	0.0%
BWS22	Workstations NERL WIDE - non Ocean	0.0%	-2.3%	0.7%	0.0%	1.5%	0.0%	0.0%
BWS23	Workstations NERL WIDE - non Ocean & non MoD	0.0%	-1.0%	1.0%	0.0%	0.0%	0.0%	0.0%
BWS30	Workstations SWANWICK - total	0.0%	-1.4%	0.9%	0.0%	0.5%	0.0%	0.0%
BWS31	Workstations SWANWICK - total non MOD	0.0%	-1.1%	1.1%	0.0%	0.0%	0.0%	0.0%
BWS33	Workstations SWANWICK - AC	0.0%	0.6%	0.0%	0.0%	-0.6%	0.0%	0.0%
BWS35	Workstations SWANWICK - TC non MoD	0.0%	-7.5%	7.5%	0.0%	0.0%	0.0%	0.0%
BWS40	Workstations PRESTWICK - total	-7.0%	2.9%	0.0%	0.0%	4.2%	0.0%	0.0%
BWS41	Workstations PRESTWICK - total - non MOD	-7.3%	7.3%	0.0%	0.0%	0.0%	0.0%	0.0%
BWS42	Workstations PRESTWICK - total non Ocean	0.0%	-3.7%	0.0%	0.0%	3.7%	0.0%	0.0%

Source: Data from NERL and CEPA analysis

Key:

- Positive numbers (shaded red): The service line is allocated more costs after the 'capability weighting' than it would do without the capability weighting (i.e. if costs were allocated simply based on the *number* of workstations).
- Negative numbers (shaded green): The service line is allocated fewer costs after the 'capability weighting' than it would do without the capability weighting.

Table A3.3 above shows that the capability weighting process generally reduces the costs to the OC service line, and increases costs to the LA and MoD service lines. The impact on the Eurocontrol service line is more mixed.

It should be noted that:

- the reduction in costs allocated to OC (as a result of the 'capability weighting' adjustment) seems credible. From discussions with CAA and NATS, OC's workstations do not have radar capability (they control traffic "procedurally"), so they are less complex and attract lower costs under the weighting process.
- in relation to LA and the MOD we are advised that the movement of costs towards these service lines reflects the additional complexity required to operate these services. This again appears logical.

Test 4 – Driver support files

We have reviewed a sample of driver support files, as provided by NATS. High level details of these files are provided in Table A3.4 below.

Table A3.4: Review of sample of workstation driver support files

Number	Driver Name	Year of use	Date of last update	Date of last review
BIN24	Turnover - NERL Total External	2012/13	22/12/2011	22/12/2011
BIN27	Turnover - NERL Excl NSL and NS Helis	2012/13	22/12/2011	22/12/2011
BIS02	Information Solutions - Turnover_CustAcs	2012/13	21/12/2011	21/12/2011
BOA52	AGA Channel Legs NERL Wide	n/a	26/06/2009	20/12/2012

Source: Data from NERL

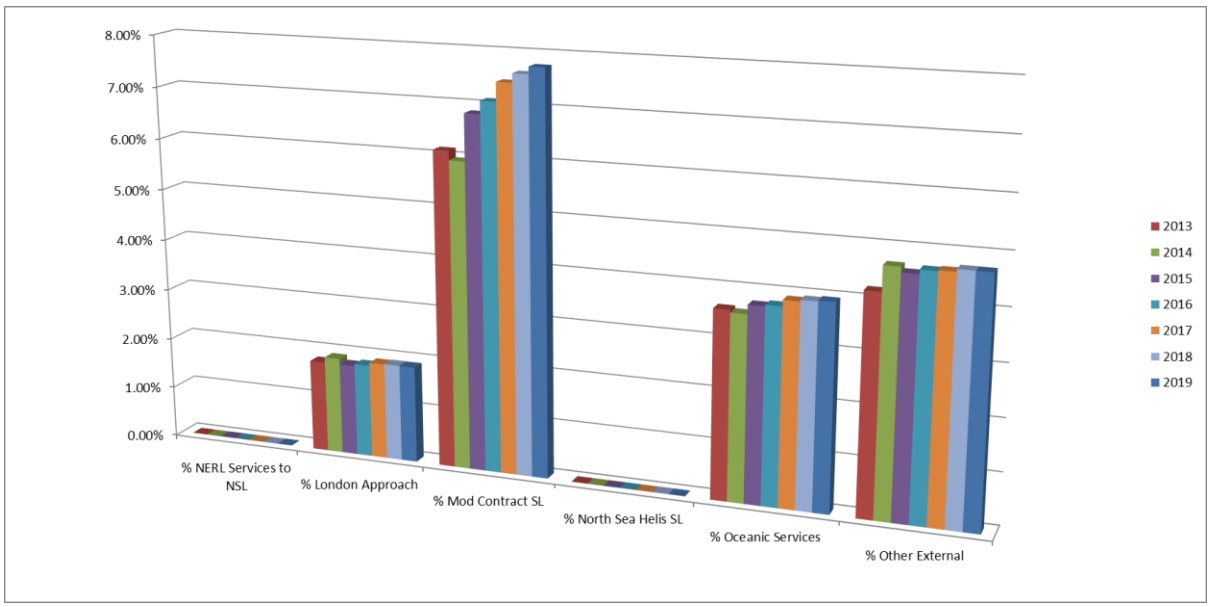
Table A3.4 above shows that the top three sampled drivers were updated/reviewed in the financial year prior to the financial year in which the driver was applied i.e. the 'year of use' for the drivers is 2012/13, and the drivers were most recently reviewed/updated in December 2011. The other driver file (BOA52) was most recently reviewed in December 2012, although the file did not specify in which year it would be used. All driver files also specify the person who undertook the last update or review, which provides a useful audit trail.

Our review indicates that the files provide a rationale/explanation for the driver, although this is not always particularly comprehensive. For example, the third driver (BIS02) is used to allocate IT costs between NERL and NSL based on the number of IT users in each entity. The file simply states that "the number of IT users is an acceptable way to reflect utilisation". However, when the same driver then allocates NERL's costs between the NERL service lines, it states that "the basis… is turnover", which does not seem to provide much evidence as to why turnover should be used as opposed to an alternative driver. We consider that the rationale for the driver

could be clearer, in this instance reflecting NATS views that turnover is a good proxy for IT allocation, and that files should be consistent.

Some of the driver files reviewed show changes to percentage allocations for future years (forecasts), which was a recommendation from the LECG report (even though it was acknowledged that the impact would be relatively small). Figure A3.1 below provides an example, by showing the forecast allocation percentages for one of these cost drivers (BIN27) for a number of future years (2013 to 2019). We note that the Eurocontrol percentage allocation (which is by far the largest of the service lines) has been excluded from this graph, in order to highlight the changes that are occurring over time for the other service lines

Figure A3.1: Forecast allocation percentages for cost driver BIN27 (excl. allocation to Eurocontrol) (%)



Source: Data from NERL (BIN27 driver support file)

However, we note that whilst allocation percentage forecasts are included within the turnover driver support files in Table A3.4 above (i.e. BIN24 and BIN27), these forecasts are not contained within the support files for the other two drivers (BIS02 and BOA52). As explanation for this, NERL notes that it "is not practical" to forecast the number of IT users or the number of Air/Ground/Air (AGA) channels, and so the latest actual values are used.

The 'BIS02' driver is in the top 10 drivers in terms of total costs allocated (albeit, at number 9), so it is a relatively important driver. While not a major issue, on balance we consider it appropriate to update these driver forecasts to ensure accuracy, based on simplified assumptions. We believe that it should be relatively straightforward to make such assumptions. For example, most businesses forecast IT users and we consider it should be reasonable for NATS to do the same, based on the change in staff numbers for example. We therefore recommend that NATS reconsider its position including forecasts in driver files, doing so would also ensure compliance with LECG's recommendations.

From the perspective of our assessment, one potential limitation of the driver support files is that they are linked to NATS' internal files / spreadsheets, without much annotation provided as to the source of the data. Therefore it has not possible for us to verify all of the percentage allocations (although we note that we have undertaken our own analysis in *Test 1* above). Given that these support files are linked, it would be beneficial to see some explanation as to the source of the data. However, we also consider there to be benefits from linking the driver file allocation percentages to NATS' internal files because it reduces the potential for error over time from hard-coding. Therefore, it would seem most appropriate for NATS to continue to link their driver support files, but in addition to provide some further explanation to ensure that these percentages can be easily traced.

Overall, we consider that the current set of driver support files to be an improvement on the set reviewed by LECG n that a number of recommendations have been adopted. The files that we reviewed were reasonably well maintained (e.g. with an audit trail for the last person to update the file). However, greater rationale/explanation for the driver could be provided.

6.7.1. High level overview

Table A3.5 below shows the magnitude and proportion of NERL's total costs which are allocated by different types of drivers. It shows that 30% are allocated to a single service line (as previously discussed). All of the remaining driver types allocate costs across multiple service lines: 43% of costs are allocated using workstation drivers, 16% with turnover drivers, and 11% with other drivers (e.g. number of customer accounts).

Table A3.5: Costs allocated by different driver types (2012/13)

Driver type	Costs allocated (£m)	% of total costs allocated
100% (single service line) drivers	152.6	30.0%
Workstation drivers	218.8	43.1%
Turnover drivers	80.9	15.9%
Other drivers	55.8	11.0%

Source: Data from NERL

Table A3.6 below summarises the costs allocated by the top drivers in 2012/13. It shows that the top 5 drivers allocate over 50% of NERL's total costs, and that the top 10 drivers allocate over 75% of NERL's total costs.

Table A3.6: Costs allocated by NERL's top drivers (2012/13)

Group of cost allocation drivers	Costs allocated (£m)	% of total costs allocated
Top 5 drivers	285.0	56.1%
Top 10 drivers	392.8	77.3%
Top 15 drivers	448.9	88.3%
All 41 drivers	508.2	100.0%

Source: Data from NERL

6.7.2. Focus on top 10 cost drivers

Table A3.7 below focuses on the costs allocated by the top 10 cost drivers given their coverage of costs.

As context for this table, it is useful to understand how the drivers are applied. A useful example to consider is the variety of 'Swanwick' workstation drivers, of which there are four in the top 10 in Table A3.7 below. Respectively, these four drivers relate to terminal control (TC), area control (AC), all services (total), and all civil services (total non MoD). In terms of NERL's choice of which driver to use:

- If a particular staff member provides air traffic control (AC) services to NERL, then their costs would be best allocated across the different service lines using the "Workstations SWANWICK – AC" driver.
- However, if a different staff member provides engineering support across all of NERL's service lines, then the most appropriate driver for their costs would be 'Workstations SWANWICK – total'.

A particular cost line (e.g. the cost of a particular member of staff) can only be allocated using a single driver (although this single driver may then allocate/split these costs across a number of service lines). Therefore, in Table A3.7 below, the costs allocated by the different drivers are mutually exclusive.

Table A3.7: NERL's top 10 cost allocation drivers (2012/13)

Cost allocation driver	Driver number	Costs allocated (£m)	% of total costs allocated
Eurocontrol 100%	B0100	120.8	23.8%
Workstations SWANWICK – TC	BWS35	48.8	9.6%
Workstations NERL WIDE - all Service lines	BWS20	48.1	9.5%
Turnover - NERL Excl NSL and NS Helis	BIN27	36.1	7.1%
Turnover - NERL Total External	BIN24	31.2	6.1%
Workstations SWANWICK – total	BWS30	25.0	4.9%
Workstations SWANWICK – AC	BWS33	22.8	4.5%
Workstations NERL WIDE - non Ocean	BWS22	22.0	4.3%
Information Solutions - Turnover_CustAcs	BIS02	19.7	3.9%
Workstations SWANWICK - total non MOD	BWS31	18.3	3.6%
Total		**392.8**	**77.3%**

Note: There are no Prestwick drivers in the top 10. The top Prestwick driver is 'Workstations PRESTWICK – total' driver ranked at number 11, allocating £14.4m of costs in 2012/13.
Source: Data from NERL

As shown in the table above, 'Eurocontrol 100%' is the largest cost driver, allocating almost a quarter of NERL's total costs. The next two largest drivers are both workstation drivers, which each account for almost 10% of NERL's costs. Of the other seven drivers, four are workstation drivers, two are turnover drivers and one is a blended driver (based on turnover and IT user accounts).

6.7.3. Changes to top 10 driver over time

In order to assess changes to cost allocation since the LECG report we have undertaken an analysis of how the top drivers have changed over time, moving from the LECG report (2008/09) to the figures shown above in Table A3.7.

As noted in Section 3.3 in the main report , LECG found that changes had not been made to the percentage service line split within allocation drivers between 2007/08 and 2008/09, and therefore recommended that drivers should be reviewed / updated at least annually. Overall, we find that drivers now seem to be updated on an annual. However, this is not immediately straightforward to demonstrate, because when NATS updated the drivers between 2008/09 and 2009/10, it was forced to change the names of these drivers. Therefore, to show how the driver

allocation percentages have changed over time, we first need to determine how the 2008/09 drivers map to the drivers from 2009/10.

We have compiled a comprehensive table (Table A3.8 below) illustrating the percentage of costs allocated to different drivers over time, for all of the top 10 drivers in both 2008/09 (the time of the LECG report) and 2012/13.

Before reviewing Table A3.8 it is helpful to provide some context to the changes which have occurred to the drivers. In 2008/09 (i.e. before additional functionality was added to the NIBS system in 2009/10), if NERL updated a driver's percentage split between service lines it required the creation of a completely new driver. i.e. it was not possible to change the service line split without changing the driver number. However, from 2009/10, updated functionality within NERL's NIBS system allowed the service line percentage split to be changed for a driver without having to create an entirely new driver. Between 2008/09 and 2009/10, a new series of virtually identical drivers were created, with virtually the same description, very similar (although slightly different) service line percentage splits, but with new driver numbers.

In order to provide greater clarity within Table A3.8 below, we have grouped together drivers that are essentially the same, but have different driver numbers from in 2008/09 and 2009/10. This is helpful because, as Table A3.8 shows, only one of the top 10 drivers from 2008/09 is in the top 10 for 2012/13 in terms of name alone.[51] However, when we group the drivers together (i.e. ignoring changes to the driver names), eight out of the top ten drivers are the same across 2008/09 and 2012/13.

One further point to note on Table A3.8 is that we identify the drivers which require some more detailed analysis (labelled with an asterisk in the furthest right column, entitled 'Issues').

[51] 'Eurocontrol 100%' is a driver that allocates 100% of costs to the Eurocontrol service line, and because the percentage has not changed over time, the driver has remained the same between 2008/09 and 2009/10. However, all of the other top 10 drivers allocate costs across multiple service lines and have therefore been renamed between 2008/09 and 2009/10.

Table A3.8: NERL's top 10 cost allocation drivers (2012/13)

Cost allocation driver description	Driver number	Driver Ranking		% of total costs allocated					Issue
		08/09	12/13	08/09	09/10	10/11	11/12	12/13	
Eurocontrol 100%	B0100	2	1	14.2%	22.4%	23.6%	23.4%	23.8%	*
Workstations SWANWICK – TC	BWS35		2		7.7%	7.8%	9.5%	9.6%	*
Workstations NERL-wide site	BOA31	4		10.2%					
→ Workstations NERL WIDE - all Service lin	BWS20		3		11.2%	10.3%	11.7%	9.5%	
Turnover - NERL Excl NSL and NS Helis	BIN07	3		10.8%					
→ Turnover - NERL Excl NSL and NS Helis	BIN27		4		9.4%	7.7%	5.5%	7.1%	
Turnover - NERL Total External	BIN02	7		3.6%					
→ Turnover - NERL Total External	BIN24		5		3.9%	3.5%	5.9%	6.1%	
Workstations Consol Swanwick site	BWS02	6		4.8%					
→ Workstations SWANWICK – total	BWS30		6		3.8%	4.4%	4.1%	4.9%	
Workstations LACC/LJAO	BOA33	5		4.8%					
→ Workstations SWANWICK – AC	BWS33		7		6.7%	6.0%	6.0%	4.5%	
Workstations Non-Oceanic NERL-Wide	BOA96	8		2.6%					
→ Workstations NERL WIDE - non Ocean	BWS22		8		3.2%	5.9%	5.4%	4.3%	
Information Solutions - Turnover_CustAcs	BIS01	10		2.4%					
→ Information Solutions - Turnover_CustAcs	BIS02		9		2.5%	2.5%	2.4%	3.9%	
Workstations Civil Consol LACC	BWS01	1		22.4%					*
→ Workstations SWANWICK - total non MOD	BWS31		10		6.1%	4.5%	3.2%	3.6%	*
Share of NERL Turnover (Overheads)	BOA87	9		2.4%					

Source: Data from NERL

Table A3.8 above has several interesting features, which are discussed in turn below.

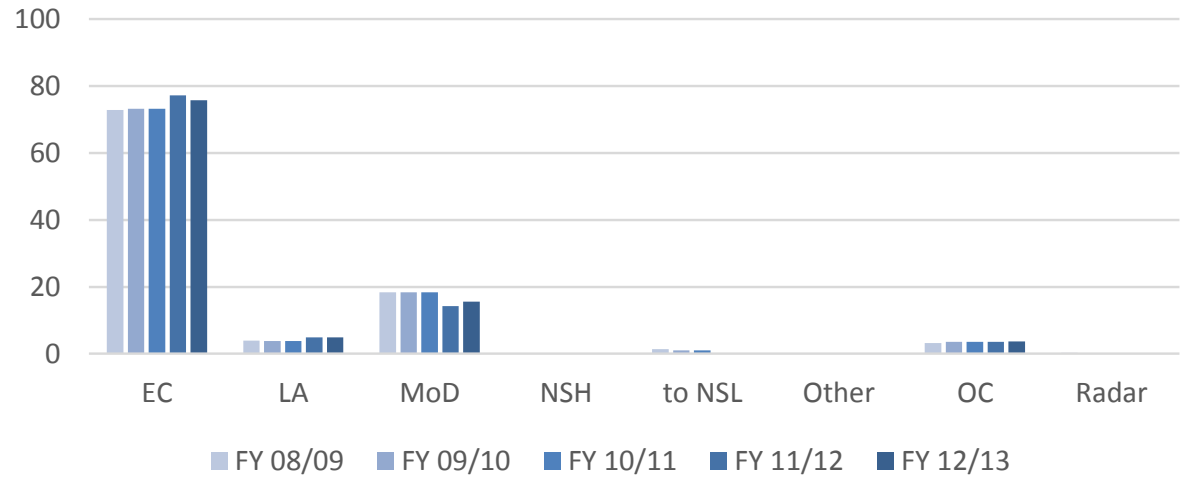
Drivers which seem to be consistent over time

Firstly, there are some drivers which do not need further analysis. These are drivers which are virtually identical between 2008/09 and 2009/10 in all but name. e.g. rows 3 and 4 in the table contain a NERL-wide workstation driver, which was called 'BOA31' in 2008/09 and was renamed as 'BWS20' in 2009/10. These drivers have been grouped together in Table A3.8, with an arrow indicating where there is a new driver in 2009/10 based on the driver in the row above.

We have concluded that these drivers do not require significant further analysis because the percentage of costs which that driver is allocating has not changed materially over time and will have been subject to previous reviews. Continuing with the same example as above, 'BOA31' allocated 10.2% of NERL's costs in 2008/09, and the renamed driver ('BWS20') subsequently allocated 9.5%-11.7% of costs in the years thereafter.

However, the final check for these drivers is to ensure that the percentage split by service line is sufficiently consistent between the old and the new drivers. Continuing with the same driver example, Figure A3.2 below shows the percentage split for the NERL-wide workstation driver (which is 'BOA31' in 2008/09 and is 'BWS20' thereafter).

Figure A3.2: Service line split for the NERL-wide workstation driver



Source: Data from NERL

Figure A3.2 above shows that the service line percentage split is virtually identical between 2008/09 and 2009/10, i.e. virtually the only change to the driver was the new name. Therefore there is evidence that these drivers are being applied consistently over time.

In Table A3.8 above, there are a number of drivers that follow this example, and because we consider that they have been treated consistently over time, we have left the 'Issues' column blank. In Annex 4 we attach the service line percentage split graphs (i.e. like Figure A3.2) for each of these drivers, to show that the percentage change over time is consistent.

Returning to LECG's recommendation of (at least) annual reviews of the drivers, this analysis also demonstrates that the drivers are being updated over time. For example, considering Figure A3.2 above, the percentage allocations do change over time, which is evidence that NATS is updating its drivers[52]. Furthermore, the graphs in Annex 1 provide similar evidence of this observation for the other cost drivers.

Drivers which require further analysis

There are however several drivers which require some further analysis, which have been labelled with an asterisk in Table A3.8 above:

- The 'Eurocontrol 100%' driver (BO100) allocates a significantly higher proportion of costs in 2009/10 (22.4%), and thereafter, than it does in 2008/09 (14.2%).
- The 'Workstations Swanwick – TC' driver (BWS35) is ranked 2nd in terms of allocating costs in 2012/13, but its equivalent driver in 2008/09 (entitled 'Workstations Civil LTCC', B0A97) was not in the top 10 drivers in 2008/09.
- The 'Workstations Swanwick – total non MoD' driver (BWS31) is ranked 10th in 2012/13, allocating 3.6% of costs. However its equivalent driver in 2008/09 (entitled 'Workstations Civil Consol LACC', BWS01) was ranked 1st out of all drivers in 2008/09, allocating 22.4% of NERL's costs.

We raised an initial query on these issues, and in response NERL provided a short note discussing the operational changes that had led to these changes to drivers. In 2007/08 there were two large changes to NERL's operations: In November 2007 the Terminal Control (TC) function moved from West Drayton (LTCC) to Swanwick, and in January 2008 the Military operations room moved from west Drayton to Swanwick. The result was that Swanwick went from providing almost exclusively air traffic control functions (prior to 2008), to providing air traffic control, terminal control and military functions.

This seems to explain two of the changes discussed in the bullet points above:

- The rise in TC workstations at Swanwick explains the rise in ranking for the 'Workstation Swanwick – TC' driver, compared to its predecessor 'Workstations Civil LTCC'.
- The rise in MoD workstations at Swanwick would reduce the proportion of non-MoD workstations. This helps to explain the fall in ranking for the 'Workstations Swanwick - total non MoD' driver, compared to its predecessor 'Workstations Civil Consol LACC'.

We raised a further query on the fall in ranking for the 'Workstations Swanwick - total non MoD' driver because the fall in the proportion of costs allocated by this driver was so large (falling from 22.4% in 2008/09, to 6.1% in 2009/10, to 3.6% in 2012/13). We also noted the simultaneous rise in the proportion of costs allocated by the Eurocontrol service line (from 14.2% in 2008/09, to 22.4% in 2009/10).

[52] For this driver, a further test could involve considering whether these percentage allocations reconcile with the actual number of workstations.

NERL's response was that "the operation at Swanwick changed with the move of MoD and TC" and that "at this time new activities would have been created". In addition, NERL noted that there were some large changes between drivers, but that the total proportion of costs allocated by three main drivers remained virtually constant, as shown in Table A3.9 below.

Table A3.9: Changing allocations for three main drivers

2008/09		**2009/10**		**Change**
Driver number	% of total costs allocated	Driver number	% of total costs allocated	% of total costs allocated
BWS01	22.4%	BWS31	6.1%	-16.3
B0100	14.2%	B0100	22.4%	+8.2
		BWS35	7.7%	+7.7
Total	**36.6%**		**36.2%**	**-0.4**

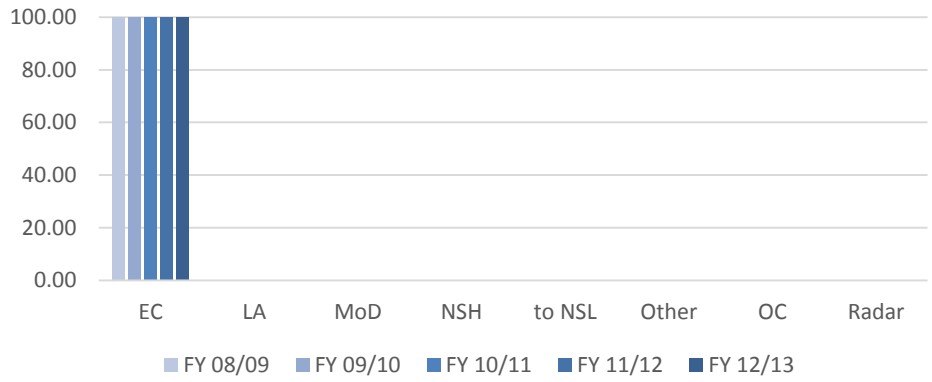
Source: Data from NERL

Overall, we consider NERL's explanation to be reasonable.

ANNEX 4 – HISTORIC COST DRIVER ALLOCATION PERCENTAGES

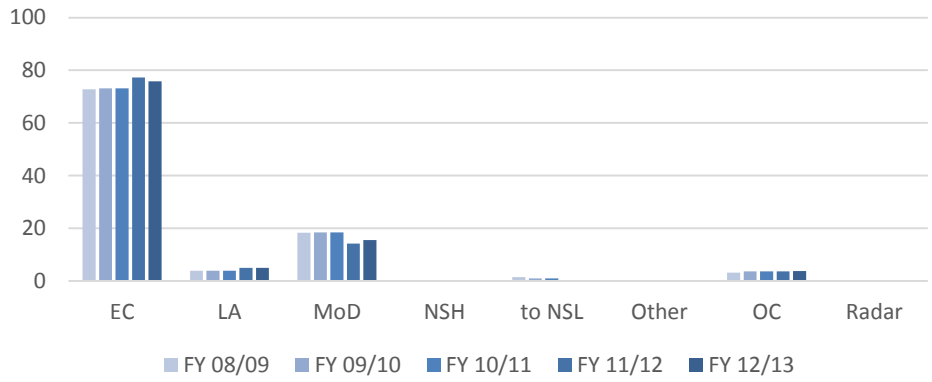
This annex contains charts showing the percentage cost allocation across service lines for the cost drivers described in Annex 3. Each graph shows, for the particular cost driver, how the allocation percentage splits have changed over time, from 2008/09 to 2012/13 (inclusive).

Figure A4.1: Workstations SWANWICK - TC (%)



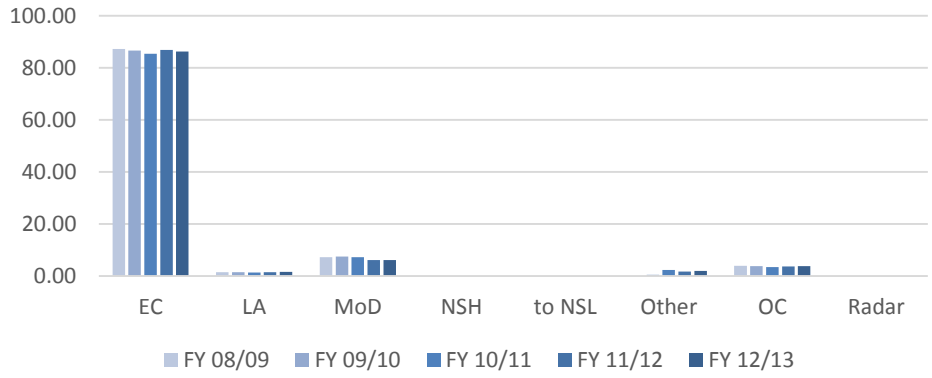
Source: Data from NERL

Figure A4.2: Workstations NERL wide – all service lines (%)



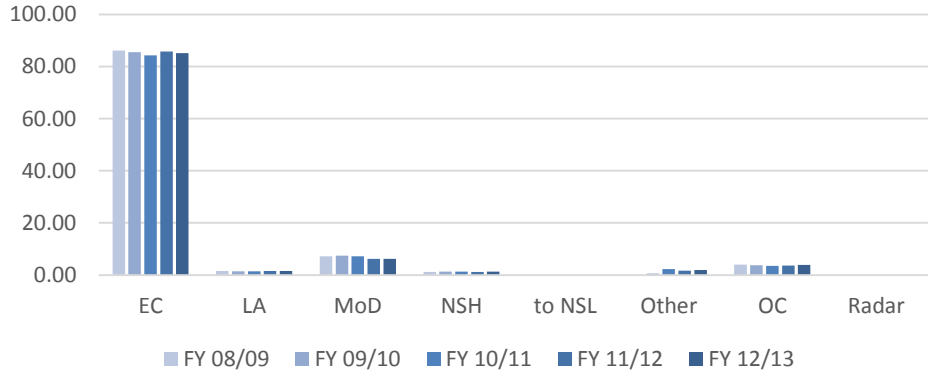
Source: Data from NERL

Figure A4.3: Turnover - NERL Excl NSL and NS Helis (%)



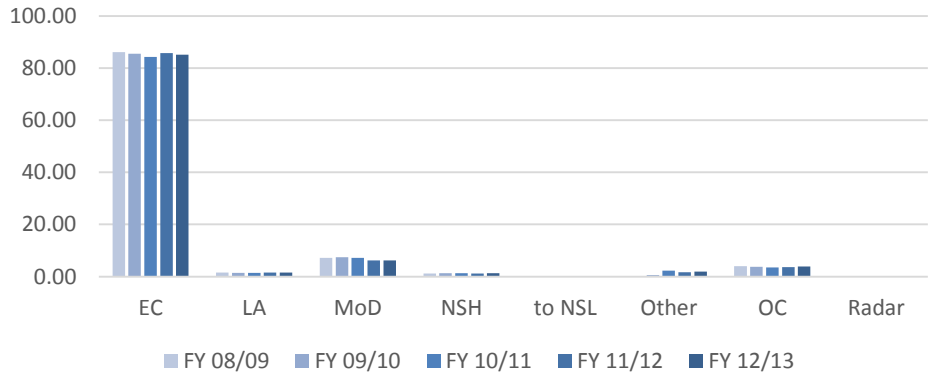
Source: Data from NERL

Figure A4.4: Turnover - NERL Total External (%)



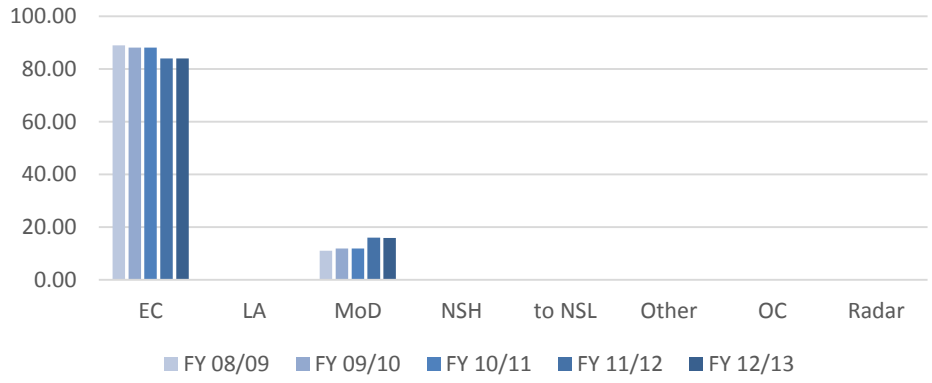
Source: Data from NERL

Figure A4.5: Workstations SWANWICK - total (%)



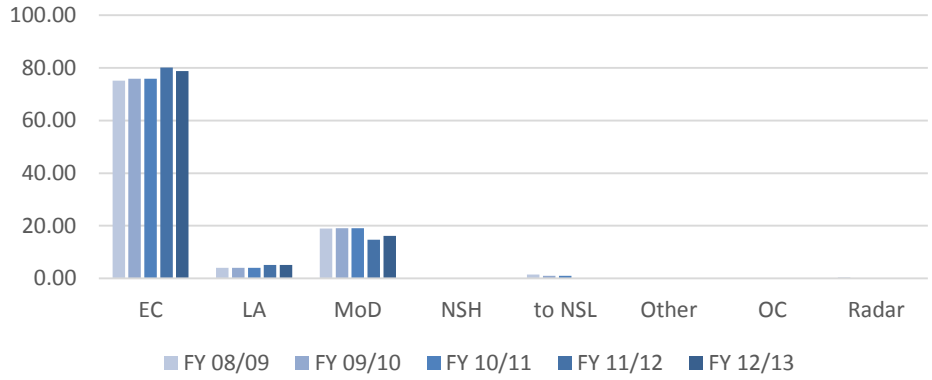
Source: Data from NERL

Figure A4.6: Workstations SWANWICK – AC (%) [53]



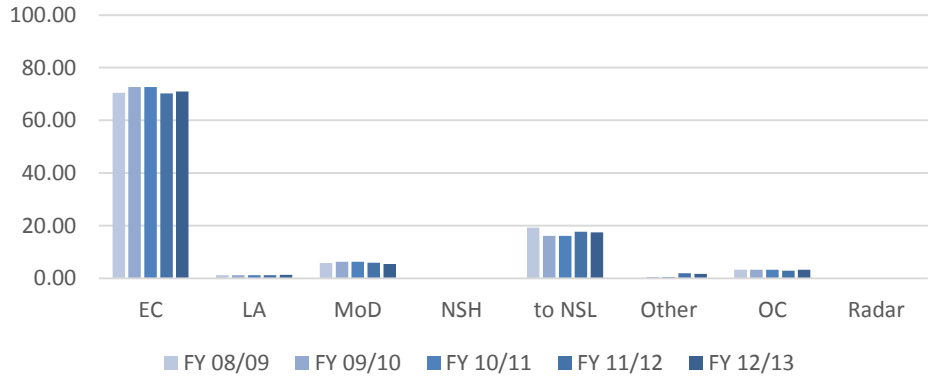
Source: Data from NERL

Figure A4.7: Workstations NERL WIDE - non Oceanic (%)



Source: Data from NERL

Figure A4.8: Information Solutions – Turnover_CustAcs (%) [54]

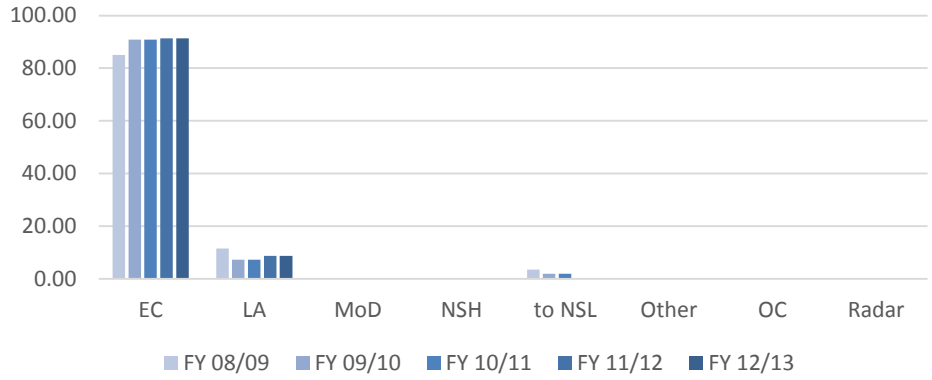


Source: Data from NERL

[53] We note that this driver was formed in 2009/10 from combining two 2008/09 drivers into a single driver. The 2008/09 percentages in this figure relate to the larger of these two cost drivers (i.e. the driver that allocated the greater proportion of NERL's costs in 2008/09).

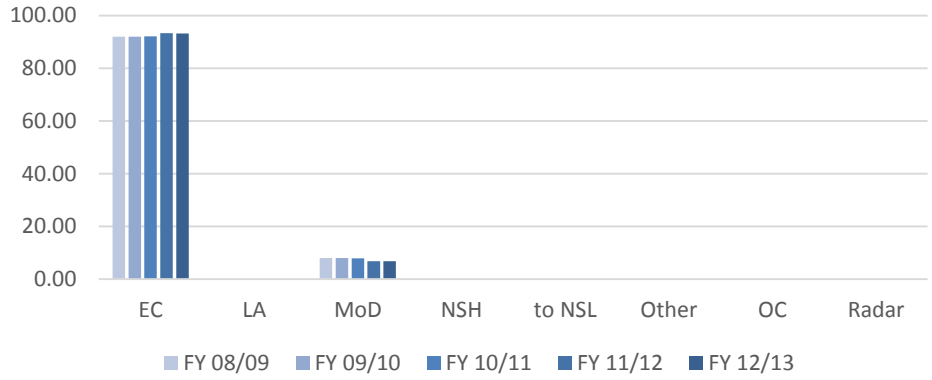
[54] A blended driver based on turnover and customer accounts

Figure A4.9: Workstations SWANWICK – total non-MoD (%)



Source: Data from NERL

Figure A4.10: Turnover - Eurocontrol and MoD Share (%)



Source: Data from NERL