NATS (En Route) plc Interim SIP 2019

Independent Reviewer Report

Grant Bremer, Chase Partners Limited
28 July 2019

NOTE

This document has been produced for the CAA as part of Condition 10 to the NATS (En Route) [NERL] Licence and is based on ongoing observations and research by the CAA Independent Reviewer Grant Bremer.

This report summarises the author's findings and opinions and represents a snapshot of the situation as of 28 July 2019.

Background

Condition 10(3) of the NATS (En Route) plc [NERL] Air Traffic Services Licence dated 19 June 2018 requires NERL to prepare a Service and Investment Plan (SIP) that refers to the most recent business plan and the related airspace and technology programmes each year. Condition 10 (3b) then requires NERL to provide an Interim SIP that, by reference to the most recent business plan and technology and airspace plans, updates NERL's investment plans, delivery against programme milestones and any material change in NERL's expectations regarding the level and quality of the provided services.

NERL submitted its SIP19 update in December 2018. After consideration of the submitted update, the CAA was *"not minded to approve the level of detail of SIP 19"*[1]. Following further discussion between CAA and NATS, CAA also commented that *"the SIP could be more useful and effective for all stakeholders if its overall structure and the approach to it was also reviewed"* [2]. Following CAA's request NERL commissioned an independent company to conduct a review of CAA, customer and other stakeholder views on the SIP to ascertain their desires and expectations from future document and to propose a new format. On the basis of this and in accordance with Condition 10(3), NERL has submitted its new format Interim SIP 19 (iSIP19) for CAA approval[3].

NERL states that "*Our service and investment plan (SIP) summarises the steps we are taking to enhance the safety, capacity and environmental performance of our service."*[4]. NERL also states that it uses three key measures of safety, service and environment and *"a number of other measures to drive performance"*[5]. In addition to the safety, service and environment measures, NERL has included a commentary about how it is addressing resilience and its conformity with the regulatory framework. NERL also confirms how its SIP enables benefits and supports the achievement of Key Performance Areas (KPAs), qualified by a *"number of factors that are managed in the operation on a day-to-day basis including, but not limited to, volume of traffic, profile of traffic, staffing levels and adverse weather"*[6].

Part 1 of the new format of the iSIP outlines each service area performance and benefits with regard to the agreed metric; the target performance level, performance and trend; and NERL's response to that performance. The iSIP also seeks to describe how the various benefits are being managed.

Part 2 of the revised iSIP format provides an update to the investment programme covering airspace and technology, with the technology being focused on DSESAR and Current (legacy) systems with the supporting People programme. For the first time, NERL also provides a view on work beyond the current RP2 period SIP with provisionally planned RP3 work (subject to approval by the CAA as part of the NPP process) to give a perspective on the longer-term projects.

Part 3 provides a financial update with risks and dependencies. Part 4 provides commentary on Oceanic service and investment. Appendices provide further detail on how NERL's SIP is supporting the Airspace Modernisation Strategy (AMS); how the Airspace programme has changed; how the technology programme has changed; the SIP consultation process; C10 milestone updates and a glossary.

1. CAA Letter, Paul Smith to CEO NATS 28 Mar 19.
2. CAA Letter, Paul Smith to Fin Dir NATS 22 May 19.
3. iSIP19_Newformat_Final_for_CAA_Approval_FINAL_Clean.pdf created 28 Jun 19.
4. NERL iSIP19, page 6, para 1.
5. NERL iSIP19, page 6, para 2.
6. NERL iSIP19, page 14, para 2.

This report will reflect the revised format of the iSIP to allow easy comparison between this report and the iSIP19 document and will focus on the RP2 reporting rather than the RP3 planning that is still not agreed and published.

Part 1: Service Performance

The iSIP19 Service Performance section opens with a brief analysis of traffic growth citing *"significantly higher than forecast traffic using Gatwick, Stansted and Luton airports"*[7]. The overall growth in 2019 is forecast to be 0.9% with a note that *"any slowing of growth is mainly a result of airport capacity constraints within the UK. This will still require additional capacity to be provided in sectors which are predicted to become bottlenecks to ensure that future demand can be serviced"* [8].

Safety Performance

NERL's safety target is 13% reduction in Risk Assessment Tool (RAT) points per 100k flights which equates to a target of 28.2 RAT points/100k flights with current performance shown as a 12% reduction. Looking forward, NERL forecast a RAT point increase/100k flights between 3-32% with a central estimate of 21%.

Benefits due to safety are forecast to be 8% from airspace changes; 4% from technology changes and 5% from operational changes. These benefits remain subject to the Post Implementation Review of the EXCDS deployment.

Service, capacity & delays

The targets for NERL with respect to service, capacity and delays are:

- C1 (delay/flight at FAB level): 15.6s
- C2 (average delay/flight): 10.8s
- C3 (impact score): 23.8

NERL currently forecast 12.6s, 8.3-10.2s, and 22.5 respectively.

Service benefits are reported as being:

Investment Area	Benefit Description (C10 31 March 2017)	Benefit Forecast (C10 31 March 2017)
Airspace	Capacity improvements realised through the following: LAMP – to provide a clear and predictable flow of traffic inbound to London City / systemisation robust at busiest times SAIP – to deliver a 1% to 5% increase in Swanwick Airspace capacity by the end of RP2and improve situational awareness in TC PLAS – to deliver a 5% - 10% increase in capacity in Prestwick Lower Airspace sectors	c.5-7%
Technology: DSESAR	Capacity improvements assessed across deployments but expected to be more significant in RP3 once the tooling is deployed to enable and exploit airspace change. In RP2: iTEC in Prestwick upper airspace and ExCDS have been the key deployments from the DSESAR programme to date. ExCDS his currently under assessment in a PIR. Early signs are promising and endorses our approach to base our future services on an unified and scalable platform.	*(We expect gains to be delivered from the ExCDS deployment in 2018. The PIR will be shared with customers on completion in early July 2019.)*
Technology: Current systems	Capacity improvements assessed against Oceanic and current system improvements: Oceanic: Introduction of Performance Based Communication & Surveillance (PBCS) in 2018 has seen a step change in traffic receiving requested clearances in an environment of increased traffic: Apr-May 2017 / Apr-May 2019 % Requested clear 59% / 66% % Entry point 89% / 93% % Height 66% / 70% Current: Improved strategic planning & traffic forecasting Dynamic flight planning assessment Options for SID and STAR offloads to improve weather resilience	Capacity gains and improvement in performance Incremental capacity increases

7. NERL iSIP19, page 15, para 2.
8. NERL iSIP19, page 15, para 3.

Environmental

NERL's environmental performance is measured by the (EU mandated) KEA horizontal inefficiency score and a more robust 3Di score on which its performance is incentivised as well as forecast fuel savings. The current forecast for 3Di is reported as 28.6 against a target of 27.7 which remains within the performance regime "dead-band" while the KEA score is forecast to be 3.58 against a target of 2.99.

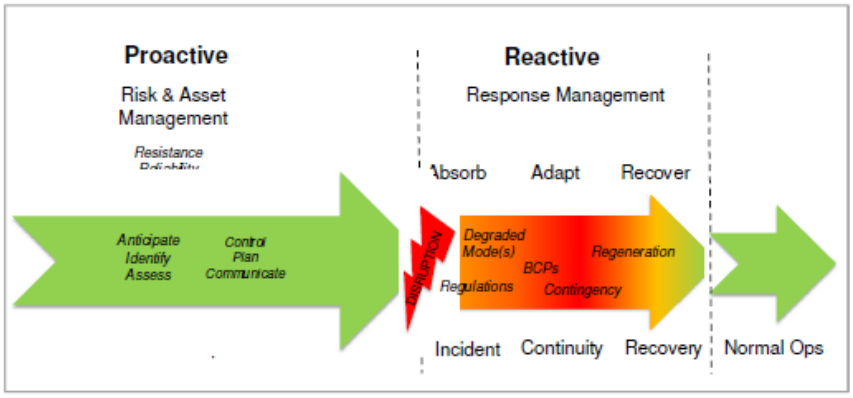
Fuel savings are currently forecast to be 209kT against an initial target of 432kT, although in 2017 NERL did make it clear that the likely achievement would be 207kT on the basis of agreed revisions to the airspace programme.

Regulatory

NERL note that it is aiming to be compliant with the current set of 75 European Implementing Rules and Directives as well relevant UK legislation and its Licence obligations. The commentary on Regulatory performance implies full compliance as would be expected.

Resilience

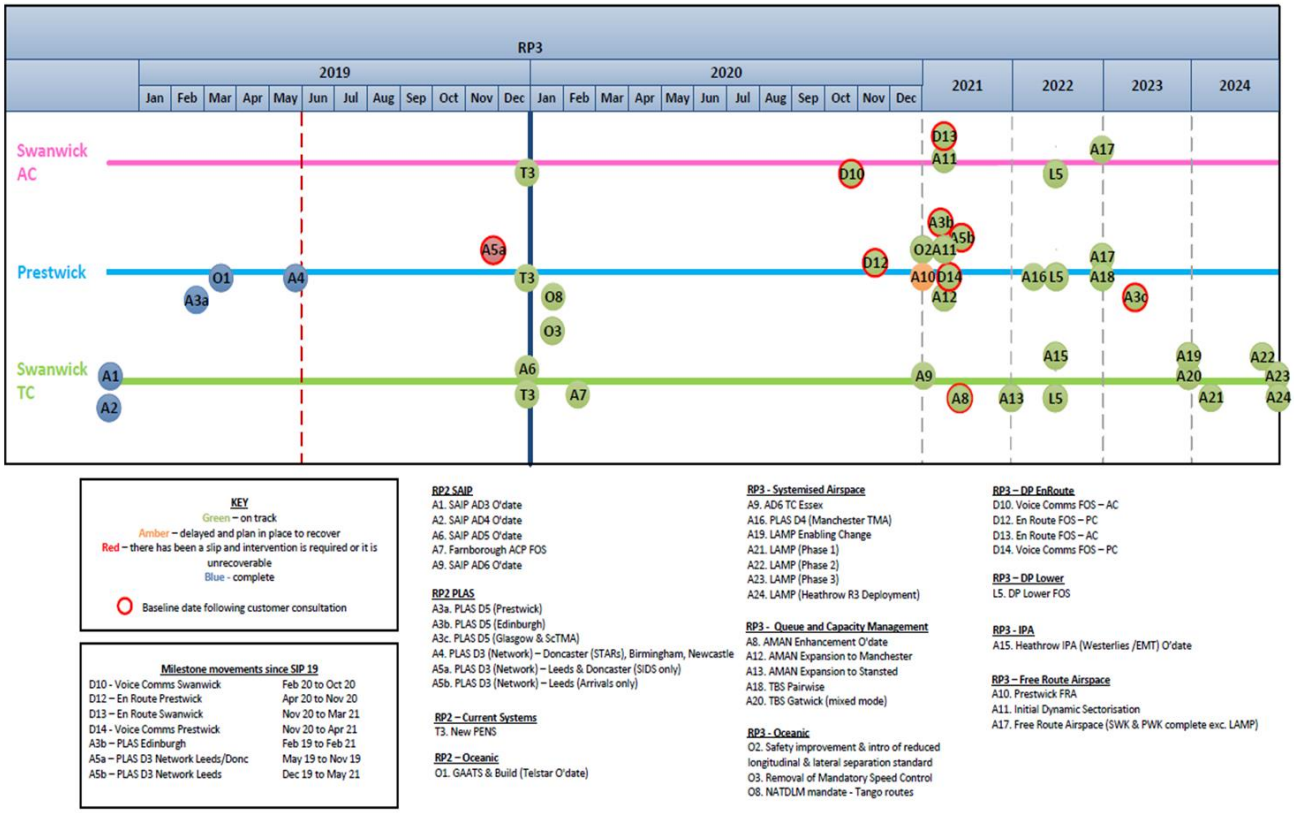
For the first time NERL has added a section on Resilience in order to meet its obligations under its revised June 2018 Licence[9] and following a formal consultation which took place early in 2019. NERL has included an overview of the Resilience approach as being:



9. Decision on modifications to Condition 2 of NATS (En Route) plc licence in respect of resilience planning, policy statement on enforcement and resilience plan guidance (CAP 1682) dated June 2018.

Part 2: Investment Programme Update

NERL reports its investment across three areas: airspace, technology and people with recognition that the RP2/3 split is an artificial boundary that enables delivery performance measurement. The overview of key milestones is:



Airspace Programme: The airspace programme has had many delays and missed or slipped milestones largely driven by changes to airport plans which NERL is dependent on. NERL has provided commentary against the slipped/at risk RP2 milestones[10]:

- A7 [previously Feb and then Dec 19, now Feb 20] Farnborough ACP
- A3b [Q1/21] & A3c [Q1/23] Scottish TMA
- A5a [previously delayed to Nov 19] Doncaster (SIDS only)

In each case the reason for delay is cited as being failure or delays in the relevant airports achieving agreements for the necessary ACPs.

Technology Programme: NERL report that DSESAR work has been positive with successful delivery of ExCDS and iTEC builds making good progress[11]. However, DP En Route has been delayed because of "late delivery of core infrastructure" [12] with concomitant delays to DP Voice. Two key milestones in the RP2 plan (D10 & D12) in DSESAR have been delayed as a result of this slippage. In explaining these delays NERL stated *"We had agreed with our supplier a target of November 2018 for delivery having introduced weekly Executive level oversight from January 2018. The supplier missed the planned delivery of November 2018 and we expected to hold to the SIP19 plan if delivery had been made at the end of December 2018. We finally received provisional handover on 21 January 2019"*[13] .

10. NERL iSIP19, page 28.
11. NERL iSIP19, page 48, para 1.
12. NERL iSIP19, page 48, para 2.
13. NERL iSIP19, page 48, para 5.

NERL engaged with customers in February 2019 to agree revisions to the delivery plans which will now see transition in November 2020 and March 2021.

The delay to these key milestones has several impacts:

- The reduced gap between DP En Route deployment in Prestwick and Swanwick carries risk due to the iTEC team's ability to manage parallel builds;
- Costs have increased by c£8m with additional RP2 service costs of £3m, £1.6m supplier costs and £1m for delays in the second network and the remainder of the increase being in RP3. NERL also anticipate a further c£25m increase in RP3;
- Free Route Airspace (FRA) deployment has slipped to April 2021. This was not discussed with customers during the February 2019 consultation because at that time NERL anticipated being able to deliver FRA to the original plan. Subsequently it became clear that the impact on military flying (because all military flying is controlled from Swanwick) required a delay to April 2021 and this was presented in the iSIP19.

Other technology programme work is reported as continuing with completion of Final Site Acceptance Testing of the Second Voice System, Factory Acceptance Testing of the Main Voice System and deployment of a replacement Distress and Diversion Auto Triangulation System at Swanwick. NERL also reports that initial experience of the new core infrastructure has been positive and system integration testing is underway as well as the new Service Operations Management (SOM) being provisioned onto the Core Strategic Architecture[14].

The current, or legacy, technology work is reported as being substantially complete, or on plan, although three milestones have slipped from RP2 into RP3[15]:

- DME Replacement [Apr 19 delay to Dec 21] 4 remaining sites;
- A8 [Nov 20 delay to Jun 21] arrival Management Enhancements;
- DVOR Replacement [Dec 18 to RP3 various dates].

Although the reasons for some aspects of these delays has previously been provided, no further update was noted in iSIP19.

People Programme: Although the People Programme is not a capital investment programme as such, it is a critical supporting element for NERL's SIP. The One Operation programme, due to deliver through RP3 and RP4, seeks to maximise the use of new technology, drive efficiency into operations and align people and processes to take advantage of new tools and airspace[16]. The Service Transformation approach plans to changing recruitment, induction and competency pathways in order to *"look at the entire capability required to carry out a role in line with a service organised approach"*[17].

Part 3: Cost Summary, Plan Risks & Dependencies Update

Cost Summary: NERL has provided a summary of the latest capital spend profile for RP2. The iSIP19 forecast costs to completion in RP2 are now:

- Airspace: £41m (£16m < budget £57m);
- DSESAR: £545m (£64m > budget £481m);

14. NERL iSIP19, page 50.
15. NERL iSIP19, page 62.
16. NERL iSIP19, page 32.
17. NERL iSIP19, page 33.

- Current Systems: £184m (£17m < budget £201m)

The overall total is now forecast to be £781m against the agreed budget of £780m (or with the inclusion of additional military funding of £2m it is £783m against the revised target of £782m). NERL stated that it is managing the portfolio closely and still expects to complete RP2 within the agreed target. The summary of costs provided in iSIP19 is:

	Actual 2015 £m	Actual 2016 £m	Actual 2017 £m	Actual 2018 £m	F'cast 2019 £m	iSIP 19 F'cast RP2 £m	C10 Baseline RP2 £m	C10 Delta RP2 £m	Prior SIP F'cast RP2 £m	Prior SIP Delta RP2 £m
Airspace	**10**	**5**	**8**	**7**	**11**	**41**	**57**	**(16)**	**41**	
Platform & Deployment	3	21	34	30	28	116	100	16	114	2
Trajectory Services	50	51	43	27	38	209	214	(5)	212	(3)
Comms Info & Surv Services	2	15	15	14	16	62	60	2	62	
Critical Facilities	8	1	10	13	5	38	35	3	38	
Foundation Services	5	20	34	30	33	120	72	48	107	13
DSESAR Forecast Total	**68**	**108**	**136**	**114**	**120**	**545**	**481**	**64**	**533**	**12**
Non-LE Facilities/Services	22	15	19	14	12	82	83	(1)	82	
Legacy Systems	25	13	12	7	5	62	74	(12)	63	(1)
Facilities Management	7	5	3	4	2	21	21		22	(1)
CO2 and Fuel Saving					1	1	5	(4)		1
Oceanic	3	4	4	4	3	18	18		18	
Current Systems Total	**57**	**37**	**38**	**29**	**24**	**184**	**201**	**(17)**	**185**	**(1)**
Total NERL Forecast	**135**	**150**	**182**	**150**	**155**	**770**	**739**	**31**	**759**	**11**
Military	6	1		2	3	13	11	2	13	
Total Forecast	**141**	**151**	**182**	**152**	**158**	**783**	**750**	**33**	**772**	**11**
Contingency							30	(30)	10	(10)
Total Forecast including Contingency	**141**	**151**	**182**	**152**	**158**	**783**	**780**	**3**	**782**	**1**
Accelerated RP3 Funding (DP Lower)					**13**	**13**			**24**	**(11)**
Total Including Accelerated Funding	**141**	**151**	**182**	**152**	**171**	**796**			**806**	**(10)**

NERL has provided some details on the cost growth in DSESAR due to the delay in DP En Route, citing:

- c£8m for core infrastructure delivery delay;
- c£2m for extra work to WAN to improve resilience;
- c£3m costs for SOM project to maintain progress.

These costs add up to a total of £13m. NERL then states that the total is £12m. Although it is not made clear in the iSIP19, it appears that the £13m is the potential cost change in Foundation Services although NERL expects that the overall net change will be £12m as noted in the DSESAR forecast total.

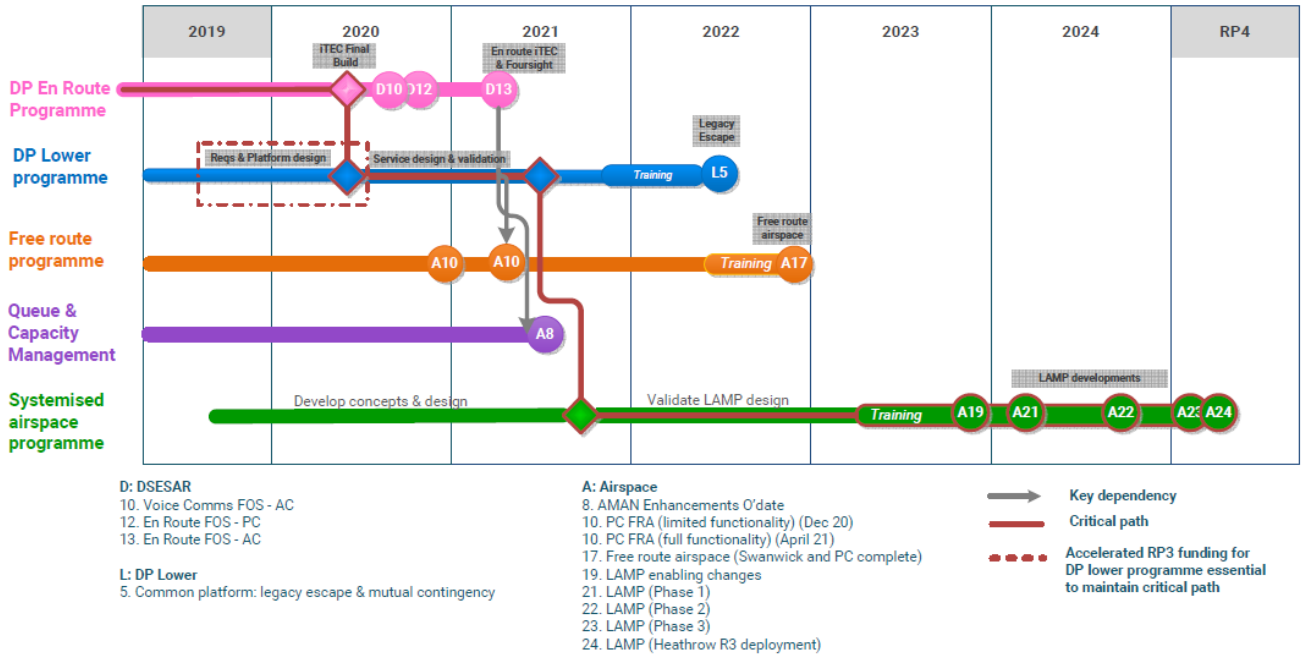
NERL has also explained that £13m of RP3 call-forward funds have been allocated to accelerate DP Lower although these costs will be recovered in RP3 not RP2.

Overall NERL remains confident that it will remain within the overall RP2 envelope of £782m, although it may have been helpful if NERL had clarified there was no further delay to key milestones

caused by the cost growth reported above. Notably there is still no clarification on what work and funding has been transferred to RP3 due to the noted delays.

Plan Risks: NERL has refreshed its Risk Matrix and have declared 7 significant risks: Critical Resource Availability; Technical/System Failure; Supplier Performance; Airport Consultation Delay; Benefit and Delivery; Regulatory Requirements and Legacy Escape Delay. These risks are all declared as being AMBER apart from the Airspace Consultation Delay which is assessed as being RED. NERL has provided commentary on each risk and the potential mitigation actions in place or under consideration.

Key Dependencies: NERL has once again explained how it manages internal cross-programme dependencies and has shown these as being:



There is also some commentary on some key external dependencies: supplier delivery; SARG support project assurance; airports commitment to airspace plans; airports undertake Airspace Change Proposals and CAA approve Airspace Change Proposals.

Appendices not covered in main report

Appendix A (Airspace Modernisation Strategy [AMS]): NERL's contribution to AMS is reported as being largely on track with one completed milestone, six milestones on plan and two delayed. Further detail of RP3 AMS delivery will be developed in future SIPs.

Appendix C (SIP Consultation Process): NERL has consulted widely over the last few months regarding the SIP process and has made proposals for change that customer appear to support. The introduction of a quarterly delivery dashboard to supplement the SIP/iSIP reporting to customers and other stakeholders, including airports, is proposed and sample/draft dashboards have been provided.

Analysis

Part 1: Service Performance

The integration of Service Performance and Benefits is an interesting change. The NERL Licence Condition 10 (11c) requires NERL to update *"material changes in the Licensee's expectations as to the level and quality of the services it will provide, the means by which the services will be provided, and the likely implications for charges to Users beyond the expiry of the period for which charges are for the time being set pursuant to the Charge Control Conditions"*. Given that Service Performance appears to be on track and that this is the end of RP2, commentary on how NERL might adapt work to meet service levels is clearly unnecessary. However, since this is the end of RP2 comments on future charges might have been appropriate, although it is accepted that this conversation has been held primarily through the RP3 consultation process. However, as NERL forecasts it will remain within its envelope of £782m for RP2 it appears that there will be no unexpected impact on future charges. Future SIP/iSIP reports should continue to provide the CAA and customers with insight into how NERL will achieve its agreed service performance targets and what impact, if any, on charges might be necessary.

The benefits aspect of this iSIP update, based around its inclusion alongside service performance, is less informative than previous SIP/iSIPs and has weakened the link between the investment plan and the expected outputs from each programme. As with previous SIP/iSIPs there is little clarity on what action NERL will take to protect the planned benefits of its investment programme.

The presentation of the P3O methodology including benefit delivery panels (which recommend changes to programmes if shortfalls in outputs are expected) and discussions with NERL suggest that NERL is taking a proactive approach to managing benefits. However, in iSIP19 NERL appears to simply report benefits and NERL should strengthen the case that they are than seeking to actively manage and achieve the benefits expected. The shortfall in environmental benefits is an example where it has been clear for some time that the planned and agreed benefits would not be delivered. This is due to the change in scope for LAMP where it was recognised by the CAA, airlines and NERL that the original RP2 LAMP scope was undeliverable and a revised programme agreed. While NERL's revised programme has remained close to plan, the anticipated fuel savings benefit has seen considerable variation and it would have been beneficial to provide further detail of NERL's management actions to address these variations, including what options it had considered to address any deficit. It is anticipated and necessary that NERL continue to evolve its RP2 benefits delivery management beyond RP2 and more importantly, the reporting of benefits management and linkage with the investment plan.

The inclusion of regulatory and resilience is a sensible evolution and provides evidence of the wider outputs of the programme. However, for those who were not involved in the consultation on NERL's resilience plan earlier in 2019 the level of detail provided does not explain how resilience is delivered. If NERL wish to report resilience in the SIP/iSIP in the future, then more detail could be provided, and it may be sensible to plan a "deep dive" providing further information on how resilience will be achieved, tested and managed if this is of interest to customers.

Part 2: Investment Programme Update

In the update on SIP delivery, NERL has provided some explanation for the delays in some key milestones and the impact of these delays building on the consultation which took place in February 2019. However, to aid customers' understanding of these critical issues NERL should link the potential and actual impact of risks (both internal through dependency and external) noted in Part 3

to any delay identified in the plan. Where there has been a recurrence of a particular risk then it would be helpful if NERL provided further evidence, including the lessons learnt and applied (as they did in SIP 19), of how NERL will attempt to ensure that repeat delays will not occur. This is an observation made before in Independent Reviewer reports of previous SIP/iSIPs reporting and should be addressed in future reports.

As with previous SIP/iSIPs there is a mixture of nomenclature including milestones, programmes, reporting metrics etc that are unhelpful. For example, the dependency mapping in Part 3 does not match the milestone reporting terminology in Part 2 or the Appendices. This inconsistency in terminology detracts from the overall impact of the report and does cause unnecessary confusion.

Part 3: Cost Summary, Plan Risks & Dependencies Update

NERL has provided a summary of the latest forecast cost to completion for the SIP. However, the explanation of costs growth could be more detailed in the document (although the major cause was briefed more fully to customers and stakeholders at an ad hoc SIP consultation in February 2019). The costs arose from one of its key supplier's delivery failure to meet its delivery schedule despite extensive and close senior NERL management effort. NERL has stated that it is seeking to reduce the financial impact of this delay through other means and thereby reduce any potential cost impact to customers. It would be helpful if NERL was clearer as to the anticipated customer impact it envisaged as a result of these changes and what actions it had taken to reduce this impact for them.

NERL has noted call forward of RP3 funds for some work and also that some milestones have slipped from RP2 into RP3. Previous SIPs have already highlighted this crossover and Part 3 noted the detailed explanations given previously in interim SIP 18 and SIP 19. It may have been helpful to include this detail again. In order to explain why costs have remained the same, NERL should differentiate between milestone slippage and transfers of scope. The former may well be the result of additional scope required to deliver the planned outcome whereas the latter could well be the result of re-planning as a result of a dependency (FRA is an example of dependency on DP En Route's change). This should be brought out in more detail in SIP 20 as it will be important for RP3 to start on the right, and agreed, baseline.

The risk section is generally helpful, although several of the noted risks are actually issues and would normally require different reporting and management. NERL should be clear if some of these are being managed as live issues, even if they are also retained as future risks.

The use of Appendices for extra detail, or supplementary information, is helpful and the structure for these should remain under review to ensure they remain so.

Conclusion

This iSIP19 report does provide a welcome update on the RP2 SIP as it nears the end of the RP. However, some of the underlying themes from previous SIP/iSIPs remain:

- Inconsistent nomenclature and terminology;
- A mix of programmes, projects, workstreams, "tube maps" and deployment points add to this inconsistency. NERL should expect to improve this view in RP3 through the consistent use of terminology built upon the P3O methodology;
- Lack of detail about how NERL will prevent or ameliorate the impact of delays and how its supplier management might continue to develop to reduce the likelihood of a repetition of the reported supplier failure to deliver to plan;

- Dependency management at the programme level is unclear;
- The SIP does not appear to be built around benefits management: benefits almost seem to be on an opportunity basis. More detail on how NERL will adjust the investment programme to optimise benefit delivery is needed to demonstrate real accountability for benefits delivery;
- Reporting and analysis of programme costs and cost growth remains unclear and in particular how cross-RP2-RP3 work and finances have been developed. This issue should be clarified as soon as possible, but no later than in SIP 20.

Overall the revised format provides an improved vehicle for iSIP/SIP reporting although further development there is still an opportunity for further development and improvement.