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Highlands and Islands Airports Ltd
Air Traffic Management Strategy 2030 Programme

Technology Assurance Review: Health Check
18 – 20 JANUARY 2021

OFFICIAL-SENSITIVE

Report status	FINAL
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Senior Responsible Owner	[redacted name] Chief Operating Officer, Highlands and Islands Airports Ltd
Accountable Officer	[redacted name] Managing Director, Highlands and Islands Airports Ltd
Investment Decision Maker	[redacted name] Managing Director, Highlands and Islands Airports Ltd
Scottish Government's Portfolio Accountable Officer	[redacted name] Chief Executive, Transport Scotland

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1. Background

1.1 Aims of the Programme

1.1.1 The Programme will provide a sustainable air traffic service for the Highlands and Islands Airports Limited (HIAL) group by modernising HIAL Air Traffic Control (ATC). This includes Centralised Surveillance, Airspace Change and a Remote Tower Solution (RTS).

1.1.2 Currently all ATC is done on the airport sites, in some cases using old or limited technology, with teams that are struggling to meet their manpower resiliency requirements. The Programme will:

- Create a new ATC centre in Inverness, using modern technology and methodologies
- Introduce Surveillance (RADAR etc.) across the HIAL estate (where appropriate)
- Introduce Controlled Airspace across the HIAL estate (where appropriate)
- Centralise all ATC roles in the new facility to improve resilience of operation.

1.1.3 The end result will be the provision of approach surveillance service (sensors, processing and a centralised suite of approach positions) and Remote or “digital” aerodrome service at 5 Airports.

1.2 Driving Force for the Programme

1.2.1 HIAL is facing a number of challenges to ensure the resilience of Air Traffic Control (ATC) operations and the continuation of safe, efficient air travel though the Highlands and Islands:

- Low staff numbers and difficulties with resilience, recruitment and retention have, in some instances, led to airport closures
- The changing regulatory environment and compliance with new policies on safe service provision requires change.
- There is an urgent need to modernise an ageing infrastructure and outdated methods of controlling air traffic.
- There is a need to create a competitive edge in the operation and ultimately deliver a more sustainable and cost-effective service.
- Sustainable air traffic control is the foundation stone for air connectivity in the Highlands and Islands.

1.2.2 Following an independent scoping study to assess the options for Air Navigation Service Provision (ANSP) at HIAL’s 11 airports, approval to begin

the Air Traffic Management Strategy (ATMS) Programme was granted by the Scottish Government in 2018. The programme has been underway since late 2018 and an options appraisal was developed to meet HIAL's Air Traffic Service (ATS) requirements.

1.2.3 The options appraisal was considered by the HIAL Board and approval to progress with Option 4 'Centralisation with Operational Efficiency' was granted. This option provides improvements and delivery of a more efficient centralised operation.

1.2.4 A Business Case was prepared and submitted to Transport Scotland in December 2019 seeking approval and funding to proceed with Option 4.

1.3 Procurement/Delivery Status

1.3.1 Based on the documentation provided the Programme consists of 2 AFIS projects and 16 live projects. Of the live projects 4 contain procurement activity at varying stages in the procurement process. In terms of procurement, this review focuses on the Remote Tower Solution and Surveillance Solution*.

1.3.2 The constituent projects for procurement are:

- Sumburgh Approach Radar
- Remote Tower Solution *- PIN issued 4/2020
- Surveillance Solution *
- Connectivity Services Provision
- Contingency Centre

1.4 Current Position Regarding Assurance Reviews

This is the first Technology Assurance Framework review for this programme.

2. **Purpose and Conduct of the Review**

2.1 Purpose of the Review

2.1.1 The purpose of this Health Check is to:

- Provide assurance to the SRO that the programme's initiation and mobilisation is sound; to retrospectively review the approach to procurement and look at future procurement activity.
- To make recommendations for any future mandatory Technology Assurance Framework (TAF) assurance and timings for this.

2.1.2 This report is an evidence-based snapshot of the project's status at the time of the review. It reflects the views of the independent Review Team, based on information evaluated during the review, and is owned by the Digital

Assurance Office (DAO) who will decide on appropriate distribution and escalation based upon the findings of the Review Team.

2.2 Conduct of the Review

2.2.1 The Technology Assurance Review Health Check was carried out on 18/01/2021 to 20/01/2021 by videoconference.

2.2.2 The Review Team members and the people interviewed are listed in [Appendix B](#).

2.2.3 The Review Team would like to thank the SRO, the ATMS Programme Director and Programme Team and all interviewees for their support and openness, which contributed to the Review Team's understanding of the project and the outcome of the review. Our thanks also to [redacted name] and [redacted name] for their excellent logistical and administrative support throughout the process.

3. **Technology Assurance Review Conclusions**

3.1 Stop/Go Gates

3.1.1 Stop/Go gates are held at key stages of major projects, which are defined by the definition in the Scottish Public Finance Manual¹. Where a "Stop" assessment is made, an Accountable Officer will only be able to proceed where the relevant recommendations have been addressed or, exceptionally, the lead Minister agrees this arrangement with the Cabinet Secretary for Finance.

3.2 Project Status

3.2.1 **The Review Team recommend that the project should proceed to the next stage with conditions.** Where a "Stop" recommendation has been given the specific recommendations which must be addressed prior to a review of this status are highlighted within the Summary of Recommendations at [Appendix A](#).

3.3 Delivery Confidence Assessment

3.3.1 The Review Team finds that the overall delivery confidence assessment is **Amber/Red**. The RAG status definitions are shown at [Appendix C](#).

3.3.2 The Review Team finds that successful delivery of the project / programme is in doubt with major risks or issues apparent in a number of key areas. Urgent action is needed to ensure these are addressed. The factors

¹ Scottish Public Finance Manual, Major Investment Projects, <https://www.gov.scot/publications/scottish-public-finance-manual/major-investment-projects/major-investment-projects/>.

that contribute to this rating are reflected in the critical recommendations at the end of this report and include:

- Lack of clear coherent visibility and transparency across the programme and down to the constituent projects. Significant shortfalls in programme management including risk management, planning and resource.
- Misalignment of governance with the needs of the programme combined with a lack of clarity regarding roles, responsibilities, delegations, approvals and decision making.
- The level of resourcing and skills and capabilities are currently well below what would be required for a programme of this size, complexity and criticality.

3.4 Observed Good Practice

3.4.1 Seeking learning from other sources and applying it in real time

3.4.2 Experienced senior management

3.4.3 Excellent communications and engagement

4. **Findings and Recommendations**

4.1 Programme Context

4.1.1 The ATMS programme is acknowledged as the biggest and most complex programme that HIAL has (ever) undertaken and is transformational for the way that HIAL delivers air traffic management. Whilst it includes some significant new technology and processes to enable that transformation, by far the most challenging aspect is the people change needed for HIAL to be able to realise the desired benefits of ATMS.

4.1.2 The programme is preparing to deliver in a complex context which includes changes in the senior leadership of the organisation and a high level of political interest.

4.1.3 The political interest includes the impact that centralising air traffic control on the mainland could have on the islands affected in the light of Scottish Government (SG) policy to support stable populations and retention/encouragement of skills in the islands. There is also a significant amount of local public interest, with a number of FOI requests already received about the programme.

4.1.4 As an Air Navigation Service Provider (ANSP), HIAL operates within a stringent regulatory environment. It must also comply with SG policies and

frameworks, including procurement, finance and employment. This high level of compliance at time constrains the way that HIAL can effect change.

4.1.5 It is noticeable and commendable that there has already been a significant change in the way the programme is being set up to deliver since the SRO joined HIAL in September 2020.

4.1.6 Interviewees noted the unique nature of the way in which the new method of service will be set up which will be a first of its kind in the UK. There is a downstream aspiration to capitalise on commercial opportunities to provide consultancy and Air Navigation Service Provider services to other ATM organisations globally. The Review Team notes that, whilst commendable, this latter area would require significant further changes in the HIAL organisation.

4.1.7 This programme is a strategic programme but set in a context of strategic change for HIAL which is still being determined. There will need to be a continued awareness in the programme of the potential impacts of downstream changes in HIAL strategic direction.

4.2 Planning and PPM

4.2.1 This a programme focused on achieving some key strategic objectives. It is complex in terms of the structure; the scale of the change being sought; the number of projects involved; the number of interdependencies; the different types of technical skills required and the safety case. There is also a socio-political element in terms of staff and the political agenda of Scottish Government towards the Islands and finally there are a raft of unknowns which will have to be dealt with.

4.2.2 The Review Team found evidence that whilst some project management best practices are being employed such as reporting by exception and the use of dashboards there is a lack of programme level management. HIAL have a project management handbook and the Review Team were provided with some key project documents. PRINCE2 appears to be the internal standard used. The Review Team and a number of interviewees felt that the programme feels more like a collection of individual projects than a coherent programme with constituent projects.

4.2.3 At the project level the Review Team heard that the majority of project managers (PMs) come from a technical background and are not professionally trained as project managers. Whilst the Review Team acknowledges that there are many good PMs with a technical background, the discrete and unique skills of professional project managers are needed to deliver a programme of this complexity and size. In particular there are key nuances between the skills needed to deliver projects in an operational environment as BAU and strategic programmes/projects that are delivering significant change to ways of working and will transition into BAU at the appropriate time. The programme is bringing in 2 project managers to provide additional support. Clarity around the roles and responsibilities of these post

holders will be crucial to achieving optimum effectiveness in terms of pace and performance of programme delivery.

4.2.4 In terms of appropriate documentation, the Review Team notes that documentation templates exist for certain documents – for example project brief, project log etc. However, it is not clear how effectively or consistently they are used across the projects.

4.2.5 It is unclear what the process is for ensuring that there is a clear “golden thread” line of sight from the programme down to all the projects to ensure that they remain aligned to the programme goals and objectives and, in turn, that the programme remains aligned to the strategic goals and objectives of HIAL. This alignment is necessary to facilitate clearer, faster decision making around priorities and options and mitigate the risk of “going off track”.

4.2.6 Below the Programme Board, the Review Team heard about the existence of a project board but saw little by way of project board minutes or decisions made at a project board level and are therefore unable to comment on its effectiveness. It’s unclear whether there are discrete project boards for each project or one that covers all the projects. The Review Team notes that best practice recommends discrete project boards for each project and **we recommend that, if not already set up, project boards for each project should be set up, reporting into the programme PMO.**

4.2.7 Project and programme teams are more effective if they are empowered. The current delegated levels do not appear to facilitate this. There is an escalation path to the programme board but the parameters for escalation were unclear apart from financial levels. There needs to be a clear hierarchy of delegation at all levels of the programme including at project level. This is discussed in more detail in the governance section of this report.

4.2.8 The Review Team notes that, in terms of ATMS, HIAL is operating a portfolio of projects with a number of interdependencies. From the evidence provided and the concerns expressed by interviewees, the focus at present is managing individual projects rather than a suite of interconnected projects comprising a programme. This presents a significant risk. For example, when making decisions on changes to a particular project, consideration always needs to be made of the impact on the other projects as well as on the overall programme. This could be a decision to move programme funds from one project to another, or to change timelines and milestones (delaying one project to enable another to progress) or moving resources between projects. These decisions need to be made at programme level noting the consequences for the programme as a whole.

4.2.9 The programme PMO plays a key role in articulating where such decisions are needed and providing the programme overview essential for the programme board to make appropriate decisions. As a starting point, a robust PMO for this size of programme would include a Controller, a Programme Planner (professional) and several PMO support roles, one of which may focus on risk. However, each PMO needs to be tailored to the needs of the

programme in question. **The Review Team recommends that the Programme Director provides the programme PMO with a clear remit, roles and responsibilities and seeks advice on best practice for the structure of a programme PMO.**

4.2.10 Effective PPM requires some basic fundamentals in terms of clear roles and responsibilities as evidenced in some basic documentation which should be consistent across all the projects. These include project briefs and initiation which include clear resource plans, clear and linked delivery, financial and communication plans. Inter/Dependencies with other projects need to be clearly defined and understood. Standard templates for key documents and logs need to be used in a consistent manner as already noted. The Review Team found a mixed picture of the above and a lack of coherence between projects. **We recommend that the Programme Director reviews the consistency and adequacy of documentation at project level across all projects.**

4.2.11 The Review Team consider that currently the programme is under resourced. We did not see or hear of a Programme Resource Plan or Resource Plans for the projects. It was therefore difficult to get a complete picture of the entire resource need either now or at later stages. The programme is aware of the need for more resource, including engineering and is attempting to acquire it but there is no documented plan against which the recruitment is being done. This planning does not need to extend in detail for the entire programme duration but should certainly address this at a high level, with suitable detailed planning for the current and next stage(s) according to proximity.

4.2.12 We note that the level of resource required to successfully deliver strategic programmes is significantly higher and broader than most BAU projects. Lack of suitable capacity and capability in resource is cited in the UKG Cabinet Office and NAO list of Common Causes of Project/Programme Failure. It is worth noting that many of the roles needed are temporary and would not form part of an enduring headcount. These types of role could validly be recruited on fixed term contracts as the programme is currently doing. This device is commonly used by a number of UK government departments such as MOD to ensure programmes and projects are suitably resourced. **We recommend that the Programme develops an overarching Programme Resource Plan with a cascade down to discrete Project Resource Plans for each project. In particular, there is an urgent need to develop a resource plan for the current RTS procurement and the next stage of delivery.**

4.2.13 In terms of Transition planning, we note that a level of planning has commenced. Some interviewees expressed concern that the level of detail is not yet there particularly for the first airports to go live.

4.2.14 The Review Team considers that the programme risk management approach needs maturing. We saw a number of discrete project logs which should have contained risks and issues but did not in all cases. We saw a section for risk in the project dashboard template but inconsistently applied.

We heard of the Corporate Risk Register but did not see a programme level risk register. From the evidence provided it is difficult to understand how the Programme and the SRO assure themselves that they have the full risk picture for the programme. Best practice recommends that there is a clear Risk Hierarchy – with an Overarching Programme Risk Register that “flows down” and back from the individual Project Risk Registers. There should be a clear Risk Management Strategy as a discrete document and this should be managed through the Programme PMO. In large programmes we have experienced benefit from the PMO having a role with a discrete focus on risk management. We recognise that the programme is aware of the above and is taking steps to address the identified shortcomings **We recommend that this action be expedited and completed in the next two months.**

4.2.15 A key critical success factor to managing the delivery of this programme is having a clear understanding of the programme structure, the dependencies between projects and the critical path. This is needed to facilitate good decision making and managing risks and issues effectively. The Review Team has seen the Integrated Master Schedule (IMS). Whilst this is a comprehensive document it presents a number of challenges: For a plan to be helpful it must be useful to different stakeholders and not be a burden to manage. It also needs to reflect the current situation. It is unclear whether the programme has appropriate software tools to facilitate robust planning. Some interviewees expressed concern about the sufficiency of the current IMS and it is unclear how it is being used. The programme would benefit from reviewing the structure of the IMS and consider creating a high level/summary view showing the key milestones and critical path.

4.2.16 In turn the detailed project plans should be provided by the individual projects who are responsible for managing their own plans. A key responsibility of the programme PMO would be to liaise with the projects to assess the implications of specific project schedule changes on dependent projects, the critical path and overall programme plan and advise the Programme Director. It is also important to note that given the duration of this programme, the programme team should look to develop the plan in stages. Best Practice recommends that detailed planning is undertaken in a phased manner, i.e. the next stage is planned in detail and presented at a key review point where approval is sought to proceed with the next phase of the programme. **We recommend that the Programme Director reviews the suitability of its current IMS both for detailed use and as a vehicle for informing senior management on progress.**

Recommendations:

RECOMMENDATION 1: The Programme Director should ensure that, if not already set up, project boards for each project are set up, reporting into the programme PMO.

RECOMMENDATION 2: The Programme Director should provide the programme PMO with a clear remit, roles and responsibilities and seek advice on best practice for the structure of a programme PMO.

RECOMMENDATION 3: The Programme Director should review the consistency and adequacy of documentation at project level across all projects.

RECOMMENDATION 4: The SRO should ensure that the programme develops an overarching Programme Resource Plan with a cascade down to discrete Project Resource Plans for each project. In particular, there is an urgent need to develop a resource plan for the current RTS procurement and the next stage of delivery.

RECOMMENDATION 5: The Programme Director should establish a clear Risk Management Hierarchy with an overarching Programme Risk Register that “flows down” and back from the individual Project Risk Registers. There should be a clear Risk Management Strategy as a discrete document and this should be managed through the Programme PMO.

RECOMMENDATION 6: The Programme Director should review the suitability of the programme current IMS both for detailed use and as a vehicle for informing senior management on progress.

4.3 Governance

4.3.1 The programme has an active governance structure including a Programme Board, chaired by the SRO, which reports in to the HIAL Board. It is unclear how effective this current structure is.

4.3.2 It is not entirely clear to the Review Team, how the governance route works in terms of the role of Transport Scotland and what, if any, formal approvals are required. We note that Transport Scotland (TS) is a member of the programme board and therefore privy to the discussions and decisions made, **but it would be good practice and help to avoid unnecessary delays to formally set out the approvals and escalation routes for decision making. This should include where and under what circumstances TS approval should be sought.**

4.3.3 Membership of all programme boards and governance groups should be regularly reviewed and always as a new period of activity (such as appointing a supplier) is initiated. For the current procurement this would be prior to award of contract to the RTS supplier.

4.3.4 At present, the System Design Authority (SDA) function is provided by an external supplier. There are plans to bring this inhouse with the recruitment of a fixed term individual to be responsible for setting up an inhouse SDA. However, there is no evidence at this stage of plans to set up an Operational Design Authority (ODA) to ensure that operational needs continue to be met by any system changes, as would be expected in line with best practice. Whilst the Review Team has experience of both approaches being successfully operated, a combined Design Authority would ensure that any changes are considered by both aspects simultaneously, enable timely discussion and thereby speed up the process. **The Review Team**

recommends that the programme sets up either an ODA to “balance” the SDA and ensure that Operational needs are fully considered in any changes or combines both functions into one Design Authority.

4.3.5 The financial delegations for the programme board and SRO are clear, however the Review Team notes that these levels are low given the nature of the programme and could constrain the ability of the programme to move forward at the pace needed. The delegations at project level also need to be reviewed and should include other parameters such as scope, time etc.

4.3.6 In a programme of this nature, there are a significant number of key documents that need to be formally signed off at the relevant level. The Review Team note that several interviewees expressed a need for improved clarity around who is involved in and responsible for the review, approval and sign off of key programme documents. Improving knowledge and transparency around this would reduce the risk of unnecessary delays in clearing essential documentation that could impact on the rate of progress. **The Review Team recommends that the process for approval and sign off is formalised and published to ensure there is a clear approvals and sign off route.**

4.3.7 The Review Team recognise that HIAL as an organisation has clear operational processes and procedures for governance, approvals and delegated authority. A programme of this scale is itself considered a temporary organisation. Best practice recommends that:

- programme governance, approvals and delegated authority processes and procedures be documented and held in the programme library where changes can be managed without interfering with operational documentation.
- programme governance aligns with the governance arrangements of the organisation to facilitate swift and effective decision making.
- where appropriate programme governance, approvals and delegated arrangements may need to vary from those of the organisation to meet the specific needs of the programme.

4.3.8 The Review Team note that the programme governance structure is still evolving at present and understands that a new Integration and Resolution Committee has recently been established. Its Terms of Reference (TOR) are still being finalised but the intent is to support the Programme Board in an advisory capacity. The current governance “map” does not yet include this new committee or other intended governance groups such as the SDA (and/or ODA/DA if our recommendation is accepted). Whilst it is reasonable to expect governance structures to change and evolve to meet programme and organisational needs at any point in time, **the Review Team recommends that the SRO formalises the full initial governance structure (including its relationship to TS governance and the relationship between each of the governance groups) and initiates an annual review of governance effectiveness. This should include a review**

of the membership of programme board and other governance groups to ensure it continues to be relevant.

Recommendations:

RECOMMENDATION 7: The SRO should ensure that the approvals and escalation routes for decision making on the programme are formally documented and, where appropriate, aligned with and referenced to those of the HIAL organisation, for example the Framework Agreement, matters reserved for the Board and more delegated authorities, to avoid unnecessary delays. Access to the HIAL Framework Agreement and other corporate documents should be made easily accessible to all. Where these are contained in a number of documents consideration should be given to consolidating them in a summary form or providing links for ease of access.

RECOMMENDATION 8: The SRO should commission the programme to set up either an ODA to “balance” the SDA and ensure that Operational needs are fully considered in any changes or combines both functions into one Design Authority.

RECOMMENDATION 9: The SRO should ensure that the processes for approval and sign off on the programme are formalised; where necessary aligned to the HIAL organisational processes and where necessary amended to meet the needs of the programme. These should then be published and made accessible to existing and new programme members as well as HIAL staff to ensure full visibility and transparency.

RECOMMENDATION 10: The SRO should ensure that the governance structure for the Programme is reviewed, fully documented and approved. The document should clearly detail the relationship between the Programme, the HIAL Board and Transport Scotland. Where necessary the document should reference other key documents detailing key governance arrangements between HIAL and key governance groups/stakeholders that are relevant to the programme. The SRO should also initiate an annual review of governance effectiveness. This should include a review of the membership of programme board and other governance groups to ensure it continues to be relevant.

4.4 Procurement/Commercial

4.4.1 The Review Team found evidence that the initial stages of procurement for the RTS appears to have been carried out following a robust and clear process under the guidance of an experienced procurement professional.

4.4.2 There is a clear rationale for pursuing a 2 stage negotiated procedure procurement given the importance and complexity of the solution and good market testing has been undertaken with the suppliers.

4.4.3 We commend the programme for its learning culture and note that a number of conversations have been had with existing users of Remote Tower solutions to inform buying strategy and level of specification required. The resultant information has been taken on board. Whilst this led to a delay in stage two as a detailed Social Responsibility Sustainability was compiled the Review Team agrees that it was a worthwhile delay to put the procurement in a better position to achieve a successful outcome.

4.4.4 Some clear thought has been given to the commercial and contract management of the supplier in delivery, implementation and operation. However due to lack of sight of key tender documents listed below we are unable to comment on the suitability of and risks associated with the contract and accompany schedules:

- ATM Operational Requirements
- Scope of Services and Statement of Works
- Draft Contract
- Concept of Operation (RTS)
- Project Delivery Milestones

4.4.5 Thought has been given to the evaluation and it is planned to prepare the evaluation team in advance. The Review Team commends this approach but notes that ample time must be allowed for the preparation phase, including provision for “dry runs” to reinforce embedding of the training provided. A clear plan should be developed and communicated so that everyone involved is aware of how the process will be conducted, each person’s roles and responsibilities and how the evaluation sessions will be moderated. It is important for individuals not to underestimate the time it will take to evaluate and score the material and time needs to be blocked out to allow “headroom” for the evaluators to focus solely on the evaluation, with provision to backfill roles planned and approved. The negotiated phase will also need careful planning. We understand that training is to be provided to HIAL staff by the legal advisor engaged. **We recommend that ample time is allowed for the evaluation preparation phase, including provision for “dry runs” to reinforce embedding of the training provided. Resources should be fully committed to the evaluation activity and time blocked out in diaries to ensure sufficient uninterrupted focus.**

4.4.6 Once award of contract has taken place the management of the contract will be a key requirement. It is crucial that relevant HIAL personnel and the supplier have a mutual understanding of the contract and there is someone in HIAL with the right skill set given responsibility for managing the contract. It is currently unclear who this individual will be.

4.4.7 RTS is the first and largest of planned technology procurements for the programme. It is important that further procurements are planned and resourced sufficiently.

4.4.8 This report has already noted that the programme is currently under-resourced. This has led to the creation of a number of “single points of failure” with over-reliance on key individuals and a lack of resilience should one or more of those individuals become unavailable for any reason. These include the Programme Director and the Procurement advisor. We note that there is budget to bring in further procurement resource and we recommend that this be expedited to meet the needs of the RTS procurement and further procurements.

Recommendations:

RECOMMENDATION 11: The SRO should ensure that ample time is allowed for the evaluation preparation phase, including provision for “dry runs” to reinforce embedding of the training provided. Resources should be fully committed to the evaluation activity and time blocked out in diaries to ensure sufficient uninterrupted focus.

4.5 Stakeholders/Users

4.5.1 The programme affects every aspect of the HIAL operation and therefore the internal stakeholders. Key amongst these are the Air Traffic Control Officers (ATCOs) in the islands affected who will be required to operate from the central base in Inverness once ATMS is live. At this stage it is clear that many are disaffected and concerned at the prospect and unclear how many will ultimately be prepared to make the move. The programme is estimating a 40% acceptance rate at this stage. Given the long lead time for training to enable operation of Radar (including longer lead times for some ab initio entrants) the programme acknowledges that it will be challenging to ensure that a full complement of ATCOs can be provided to cover shift patterns. We note that this risk is mitigated by the phasing of delivery over several years with downstream sites having some years before the incumbent ATCOs need to make a decision. It is further mitigated by current activity in recruitment of new ATCOs.

4.5.2 In recognition of the significant organisational change element of the ATMS programme, a “People” project has been set up. This is being led by an experienced HR individual who now has a direct reporting line into corporate HR. The HR element is constrained to an extent by compliance with SG policies but the People project has now developed what is considered to be a generous package of relocation and commuting support options which are currently awaiting approval by the HIAL Board. The commuting element is designed to address concerns by those ATCOs who made a lifestyle choice to locate in the islands and wish to remain but continue their roles with HIAL. We heard some concerns as to the practicality of commuting in terms of weather and availability of flights and its uncertainties making robust rostering challenging. At this stage it is unclear how many of the affected ATCOs would consider this option.

4.5.3 The options for communication for the programme are impressive with evidence of significant effort being made to engage with affected staff and to be as transparent as possible to the whole HIAL organisation. We commend

and support the programme and HIAL senior management for their ongoing efforts to engage with affected staff despite the low level of reciprocation. We note that it is vital that these efforts continue despite the constraints and challenges presented by the current industrial action.

4.5.4 We have already noted in section 4.1 the political and local public interest in this programme and in particular are aware of the recent submission of a petition to the SG Parliamentary Committee to pause/stop the programme. A watching brief will need to be kept on this area with consideration given by the Programme Board to potential scenarios should the petition progress further.

Recommendations: None

4.6 Strategic Oversight and Assurance

4.6.1 As mentioned already this is a strategic programme focused on delivering HIAL's strategic goals and objectives which are in part still being developed. It will be important that, as part of HIAL's strategy development process, the focus of the ATMS programme is regularly reviewed to ensure ongoing alignment and where possible the development of opportunities.

4.6.2 Programme portfolio and project best practice states that assurance is used to provide confidence to stakeholders that projects, programmes and portfolios will achieve their scope, time, cost, quality objectives, and realise their benefits. A key part of an assurance process is to conduct reviews, whether on specific elements or on the entirety of a programme or project. These reviews can be carried out internally or by externals.

4.6.3 We note that HIAL has a Project Management Manual and this refers to Stage Boundary (Gateway Review) Process for assuring Project Governance at vital stages. This is good practice, however the Review Team was unable to assess from the documentation provided and the interviews, if this process was being followed and/or how effective it was. We also note the heavy reliance on external consultants for key projects/deliverables but again it is unclear how the work and outputs are assured by the Programme.

4.6.4 The complexity and public profile of the programme, together with the fact that it is funded by Scottish Government, means that the programme should embed project and programme assurance into the culture of the programme in the same way that safety is embedded as part of the operational culture of HIAL. **The Review Team recommends that the programme provides clear instructions on the internal assurance process to be followed and use the DAO independent reviews at key stages of the major procurements – prior to issuing the ITT, before award of contract and before commissioning of a service into BAU. For RTMS there should be at least one review during implementation and a review prior to transition of RTS into each airport.**

Recommendations:

RECOMMENDATION 12: The SRO should ensure that the programme provides clear instructions on the internal assurance process to be followed and use the DAO independent reviews at key stages of the major procurements – prior to issuing the ITT, before award of contract and a series of Delivery review before commissioning of a service into BAU. For RTS there should be at least one review during implementation and a review prior to transition of RTS into each airport.

4.7 Standards and Regulation

4.7.1 The programme is subject to significant regulatory requirements at both national and international level from the CAA and ICAO. As with all heavily regulated and safety focused sectors, the ATMS Safety Case must be approved before service can commence and HIAL is well used to meeting these types of regulatory requirements. However, whilst operating using Remote Towers per-se are not new, ATMS is breaking new ground in certain aspects of its proposals and some delay is being and could be further expected whilst the CAA in particular considers these. At present this is focused on the Surveillance project which cannot proceed with its procurement until a CAA ruling on co-operative surveillance (requiring all aircraft to carry and operate transponders) and for Controlled Airspace has been made. We note that the programme is making every effort to maintain ongoing communication with the CAA regarding its deliberations but timescales for a decision are unclear.

4.7.2 In terms of ICT standards and Digital First compliance, we have a level of confidence that both Digital First and the relevant ICT standards will be complied with. In addition, we are assured that the HIAL ICT director is an experienced individual with an ITIL background and a key focus on ensuring that Cyber Security is robust and is “designed in” from the beginning. This is particularly relevant to the CSC project. It is also reassuring to note that this individual will be involved in evaluation of responses to the current RTS procurement and will ensure that cybersecurity is adequately covered under supplier responsibilities.

Recommendations: None

5. **Previous Technology Assurance Review Recommendations**

5.1 Implementation of previous recommendations

5.1.1 Not Applicable

6. **Next Technology Assurance Review**

6.1 Date of the next Technology Assurance Review

6.1.1 The next Technology Assurance Review on the Programme as whole should be a further health check in late Q2/early Q3 2021.

7. Distribution of the Technology Assurance Review Report

7.1.1 The contents of this report are confidential to the Digital Assurance Office (DAO) and owned by them. It is for the DAO to consider when and to whom they wish to make the report (or any part of it) available, however Senior Responsible Owners will be consulted regarding the distribution of the report and are free to distribute the final version of the report to the programme/project team, as deemed appropriate, to enable governance obligations to be met.

7.1.2 The DAO will copy the full report to the project's Accountable Officer and also to the Scottish Government's Internal Audit Division and Portfolio Accountable Officer where these are relevant.

7.1.3 The DAO will provide a copy of the report to the Review Team Members involved in any subsequent review as part of the preparatory documentation needed for Planning Meetings.

7.1.4 Freedom of Information and any other requests for copies of the report should be directed to the DAO at DigitalAssurance@gov.scot.

Appendix A - Summary of Recommendations

Ref. No.	Report section heading	Recommendation	Status (critical / essential / recommended)
R1	4.2	The Programme Director should ensure that, if not already set up, project boards for each project are set up, reporting into the programme PMO.	Essential – within two months for those projects in flight
R2	4.2	The Programme Director should provide the programme PMO with a clear remit, roles and responsibilities and seek advice on best practice for the structure of a programme PMO.	Essential – within three months
R3	4.2	The Programme Director should review the consistency and adequacy of documentation at project level across all projects.	Essential – within one month
R4	4.2	The SRO should ensure that the programme develops an overarching Programme Resource Plan with a cascade down to discrete Project Resource Plans for each project. In particular, there is an urgent need to develop a resource plan for the current RTS procurement and the next stage of delivery.	Critical
R5	4.2	The Programme Director should establish a clear Risk Management Hierarchy with an overarching Programme Risk Register that “flows down” and back from the individual Project Risk Registers. There should be a clear Risk Management Strategy as a discrete document and this should be managed through the Programme PMO.	Critical
R6	4.2	The Programme Director should review the suitability of the programme current IMS both for detailed use and as a vehicle for informing senior management on progress.	Essential – within the next month

OFFICIAL-SENSITIVE

Ref. No.	Report section heading	Recommendation	Status (critical / essential / recommended)
R7	4.3	The SRO should ensure that the approvals and escalation routes for decision making on the programme are formally documented and, where appropriate, aligned with and referenced to those of the HIAL organisation, for example the Framework Agreement, matters reserved for the Board and more delegated authorities, to avoid unnecessary delays. Access to the HIAL Framework Agreement and other corporate documents should be made easily accessible to all. Where these are contained in a number of documents consideration should be given to consolidating them in a summary form or providing links for ease of access.	Critical
R8	4.3	The SRO should commission the programme to set up either an ODA to “balance” the SDA and ensure that Operational needs are fully considered in any changes or combines both functions into one Design Authority.	Recommended
R9	4.3	The SRO should ensure that the processes for approval and sign off on the programme are formalised; where necessary aligned to the HIAL organisational processes and where necessary amended to meet the needs of the programme. These should then be published and made accessible to existing and new programme members as well as HIAL staff to ensure full visibility and transparency.	Critical
R10	4.3	The SRO should ensure that the governance structure for the Programme is reviewed, fully documented and approved. The document should clearly detail the relationship between the Programme, the HIAL Board and Transport Scotland.	Essential – within the next 3 months

OFFICIAL-SENSITIVE

Ref. No.	Report section heading	Recommendation	Status (critical / essential / recommended)
		Where necessary the document should reference other key documents detailing key governance arrangements between HIAL and key governance groups/stakeholders that are relevant to the programme. The SRO should also initiate an annual review of governance effectiveness. This should include a review of the membership of programme board and other governance groups to ensure it continues to be relevant.	
R11	4.4	The SRO should ensure that ample time is allowed for the evaluation preparation phase, including provision for “dry runs” to reinforce embedding of the training provided. Resources should be fully committed to the evaluation activity and time blocked out in diaries to ensure sufficient uninterrupted focus.	Critical
R12	4.6	The SRO should ensure that the programme provides clear instructions on the internal assurance process to be followed and use the DAO independent reviews at key stages of the major procurements – prior to issuing the ITT, before award of contract and a series of delivery reviews before commissioning of a service into BAU. For RTS there should be at least one review during implementation and a review prior to transition of RTS into each airport.	Essential

Each recommendation has been given Critical, Essential or Recommended status. The definition of each status is as follows:

Critical The recommendation requires to be actioned before the project can be given approval by the Digital Assurance Office to move to the next stage of the project.

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Essential The project should take action to address the recommendation before the next Technology Assurance Review or by a timeline specified by the report.

Recommended Potential improvements can be made and the project should plan this activity into their future work to a timeline specified by the report.

The DAO will write to the Senior Responsible Owner following receipt of the report to confirm whether the Review Team's recommendations have been accepted, and, where this is the case, to ask for Appendix to be updated with the intended actions for addressing each recommendation. Thereafter the Senior Responsible Owner is responsible for implementing the actions in response to the recommendations. If the review has identified serious deficiencies or difficulties (including probable failure to meet the planned budget), the DAO will arrange a Review Meeting with key stakeholders.

Appendix B - Review Team and Interviewees

Review Team






Review Team Leader	[redacted name]
Review Team Members	[redacted name]

List of Interviewees

Name	Organisation/Role
[redacted name]	ATMS Procurement Advisor
[redacted name]	Programme Director
[redacted name]	Interim GMATS
[redacted name]	Head of Air Navigation Services
[redacted name]	Airport Manager
[redacted name]	Head of Communications
[redacted name]	Head of ICT
[redacted name]	HR
[redacted name]	Chief Operating Officer
[redacted name]	External Consultant
[redacted name]	ATM Project Manager

Appendix C - Guidance

RAG Status Definitions

RAG	Criteria Description
 <p>GREEN</p>	<p>Successful delivery of the project/programme to time, cost and quality appears highly likely and there are no major outstanding issues that at this stage appear to threaten delivery.</p>
 <p>AMBER/ GREEN</p>	<p>Successful delivery appears probable however constant attention will be needed to ensure risks do not materialise into major issues threatening delivery.</p>
 <p>AMBER</p>	<p>Successful delivery appears feasible but significant issues already exist requiring management attention. These appear resolvable at this stage and if addressed promptly, should not present a cost/schedule overrun.</p>
 <p>AMBER/ RED</p>	<p>Successful delivery of the project/programme is in doubt with major risks or issues apparent in a number of key areas. Urgent action is needed to ensure these are addressed, and whether resolution is feasible.</p>
 <p>RED</p>	<p>Successful delivery of the project/ programme appears to be unachievable. There are major issues on project/ programme definition, schedule, budget required quality or benefits delivery, which at this stage do not appear to be manageable or resolvable. The project/programme may need re-baselining and/or overall viability re-assessed.</p>