OBR Phase 2 - Targets Assessment

FINAL REPORT

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![ARCADIS]

Our Team

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Glossary

Abbreviation	Description	Abbreviation	Description
C&S	Carbon & Sustainability	OBR	Outcome Based Regulation
CAA	Civil Aviation Authority	Opex	Operating Expenditure
Capex	Capital Expenditure	ORC	Other Regulated Charges
CTA	Cepa Taylor Airey consultants	PCA	Pre-Conditioned Air
ESO	Enhanced Service Overlay (Opex)	PSE	Passenger Safety Equipment
FEGP	Fixed Electric Ground Power	Q6	Regulatory Control Period
FP	Final Proposals (CAA)	RBP	Revised Business Plan
H7	Regulatory control period	SEGS	Stand Entry Guidance Systems
HAL	Heathrow Airport Limited	SQRB	Service Quality Rebates and Bonus scheme
IP	Initial Proposals (CAA)	T(2, 3, 4 or 5)	Terminal (2, 3, 4 or 5)
LEPC	Lifts, Escalators, Passenger Circulation		
MAA	Moving Annual Average		

Contents

Workstream Objectives and Scope

Arcadis has been commissioned to undertake further information gathering, stakeholder engagement and analysis to support the CAA in developing the H7 OBR framework, with a focus on providing information and analysis that will assist the CAA in setting OBR targets for its Final Proposals.

Arcadis's focus is on the feasibility of HAL's and the CAA IP proposed targets (including newly proposed targets) and the scope to outperform these targets. In doing this, Arcadis considered among other things:

- The proposed updated expenditure allowances and passenger forecasts the CAA sets for its Final Proposals.
- Past and current monthly performance by HAL on the targets set.
- Changes in technology, operational/technical issues and passenger priorities, as well as other Covid-related factors.
- Airline Community stakeholder views.
- Relevant CAA guidance.

To achieve these workstream objectives, Arcadis has engaged with the CAA, HAL and the airline community to:

- Consider stakeholder feedback on Arcadis' November 2021 report, and where appropriate reconsidering previous conclusions in light of new evidence.
- Provide information and analysis on the feasibility of new targets where baseline data has recently become available or becomes available before the CAA's Final Proposals, and/or there is new expenditure information (capex and opex).
- Assess new expenditure and forecast information and consider the implications of any changes made to allowances on targets, which might involve reconsidering and updating the position set out in Arcadis' November 2021 report.

This workstream requires a joined-up approach with Arcadis' other CAA workstreams on capex and capex incentives and also with the CAA's other consultants working on Opex and commercial revenues.

Executive Summary

Arcadis has previously assessed the targets Heathrow Airport Limited (HAL) set out in its Revised Business Plan (RBP) Update 1 to determine whether the argument, logic and operational reasons used by HAL to determine any degradation in targets was reasonable, could materialise and was reflective of past performance and spending levels.

Arcadis concluded that the targets set in the Revised Business Plan (RBP) Update 1 'optimal plan' could be delivered based on the allowances the CAA has set in its Initial Proposals (IP). Many of HAL's proposed H7 targets are maintaining existing Q6 targets and there is little evidence that has been shared by HAL that clearly links the level of capex alone with a reduction in asset and service performance. Both HAL and the Airline Community has fed back on the CAA's IP Outcome Based Regulation (OBR) measures and targets and HAL has developed and published its RBP Update 2.

Further feedback and challenge was received from HAL and the Airline Community and this, along with the data supplied by HAL has been used to assess the targets contained in RBP Update 2 and the impact this has on the appropriateness of the targets and the potential for any stretch to these targets that could be assessed as part of the CAA's Final Proposal (FP) document.

The overall position is that HAL's RBP Update 2 has not significantly departed from its original proposals in the original submissions and HAL has sought to argue that any increase in targets would not be possible in some areas of the OBR Framework. The Airline Community however has challenged this view indicating that HAL has overachieved on some its targets throughout the whole of Q6 and that more stretching targets should be applied to some areas of the OBR Framework.

Arcadis has undertaken an assessment of the RBP Update 2 and the feedback received to assess whether the position held by HAL is tenable or whether there is any opportunity to identify any stretch to the OBR Targets for the CAA to consider as part of their Final Proposals.

A key challenge in assessing the data has been the impact of Covid on the most recent performance data where much has changed from Q6 both in terms of volume of passengers and rules and processes around travel and passenger expectations. Arcadis has therefore chosen to consider the data pre-Covid as the normalised data set for its analysis but has still utilised the data during the pandemic to inform its conclusions but has placed more limited weight on it.

Arcadis' view is that HAL has consistently, over the Q6 period, achieved or exceeded almost the whole suite of targets. It was therefore critical for our assessment and recommendations to the CAA to understand why this was the case and whether there was evidence to support the position either the airport or airline community held over the new target levels for H7.

It is our opinion that, for a number of the targets, HAL has not made the case or provided sufficient evidence to maintain the target at the Q6 level and that there is potential for the target level to increase. Arcadis has considered both the moving annual target level as well as monthly data performance supplied by HAL in reaching this conclusion.

There has been limited causal factor data supplied by HAL to demonstrate why failures took place so as to demonstrate factors that HAL had no control over that led to target failures from the assessment. Although it is easier to see where HAL has overperformed, what is more difficult is to consider a target level that can take into account any causal factors that might impact on any new target proposed at this juncture.

Arcadis' opinion is that there are some OBR targets that could be increased.

The possible disruption from the security transformation programme and wider industry challenges, such as recruitment for the airport operation, might impact some performance targets.

Approach

Methodology

To support the CAA in developing its Final Proposals, Arcadis has undertaken a review of the feedback received from HAL and the airline community and has considered HAL's proposals as set out in RBP Update 2 to determine whether the targets they have proposed are appropriate. Arcadis has:

- Reviewed RBP Update 2 plan against RBP Update 1 and HAL's targets and supporting rationale set out in documents supplied by HAL.

- Reviewed the relevant extracts from CTA report of Opex (enhanced service overlay) supplied by CAA which has taken place to understand the potential impact these enhanced service overlays could have on delivering the OBR targets.

- Considered HAL's historic service quality performance on a monthly basis as opposed to annually as was the case in the November 2021 report using data shared by HAL.

- Engaged with HAL to understand methodology, thinking and logic used to determine the difference in targets between the RBP Update 1 and RBP Update 2 plans – focussed on the degradation elements.

- Determined how the different forecasts used (High/Medium/Low) feature and impact on how HAL has set its targets.

- Engaged with the airline community to seek their views on the targets HAL has developed for H7.

Assessment of specific targets

Arcadis in its assessment has reviewed the measure set and HAL's historical performance against this target in Q6. The data provided by HAL has been collated and considered on an annual and monthly basis, the latter providing a greater degree of granularity that can support some of the analysis in direct response to HALs feedback on the IP report.

Arcadis has considered HAL's proposed targets against historic performance using data from April 2014 to December 2021 and how these compare with those proposed by the CAA. In addition, Arcadis has further considered any proposed changes developed by HAL as part of the RBP Update 2.

Arcadis has taken into account the views raised by the airline community in both the definition and targets set by HAL.

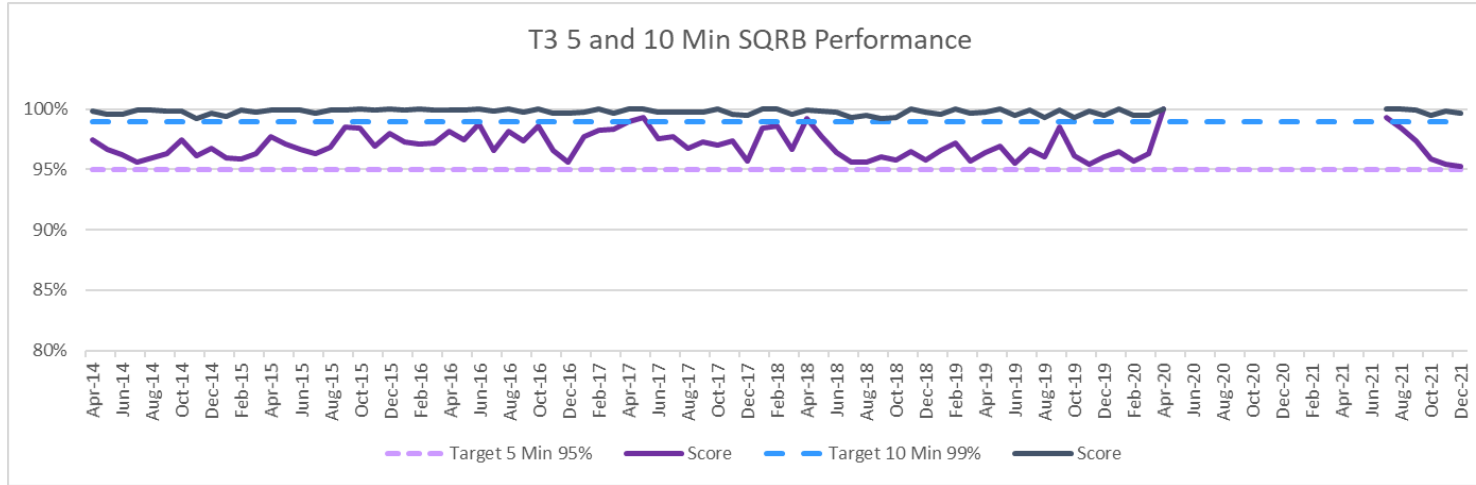# Summary on Proposed Targets

OBR analysis for Central Search

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Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Security – Central Search	95% in under 5 mins 99% in under 10 mins	95% in under 5 mins 99% in under 10 mins	Capex £747M in current mid case which allows for the full HAL H7 security programme	Y	N	N
Arcadis Summary	HAL H7 full capital allowance has been included in current CAA mid case at £747m. This covers both the regulatory programme and transformation programmes. Historic performance has been consistently strong. The forthcoming transformation programme is likely to introduce some disruption into the security environment presenting a risk of some performance degradation until the mid point of H7 when the project is due to be completed by. This is not due to any allowances the CAA is currently including in the mid case. This disruption should however be managed by HAL as part of their efficient capital delivery programme. The following slides will provide more granular insight into the individual terminals performance and operating environment.					

T2 5 and 10 Min SQRB Performance

Legend: Target 5 Min 95% — Score — Target 10 Min 99% — Score
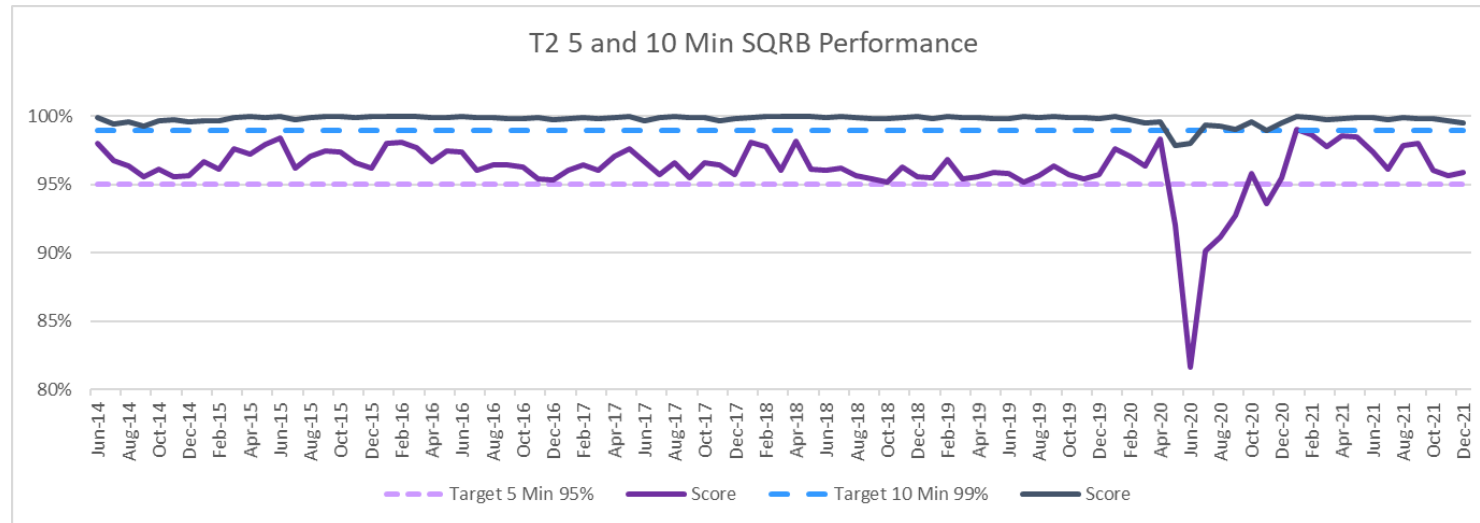
- As can be seen to the left, HAL has consistently exceeded the 95% and 99% target in every month in T2 except for around Q2/Q3 2020 when there was a significant period of failure. Given this is during the pandemic period and is arguably an isolated incident this should not have any material bearing on the proposed measure.

OBR Target Assessment | Central Search

T3 5 and 10 Min SQRB Performance

Target 5 Min 95% — Score — Target 10 Min 99% — Score

T4 5 and 10 Min SQRB Performance

Terminal closed due to covid impact – reopened June 2022

Target 5 Min 95% — Score — Target 10 Min 99% — Score

- As can be seen in the two charts to the left, HAL has consistently exceeded the 95% and 99% target in every month since April 2014.

- Whilst it is recognised HAL will resource to the current targets, the historic performance suggests the target as proposed by both HAL and the IP is achievable.

Source: HAL data

# OBR Target Assessment | Central Search

T5 5 and 10 Min SQRB Performance
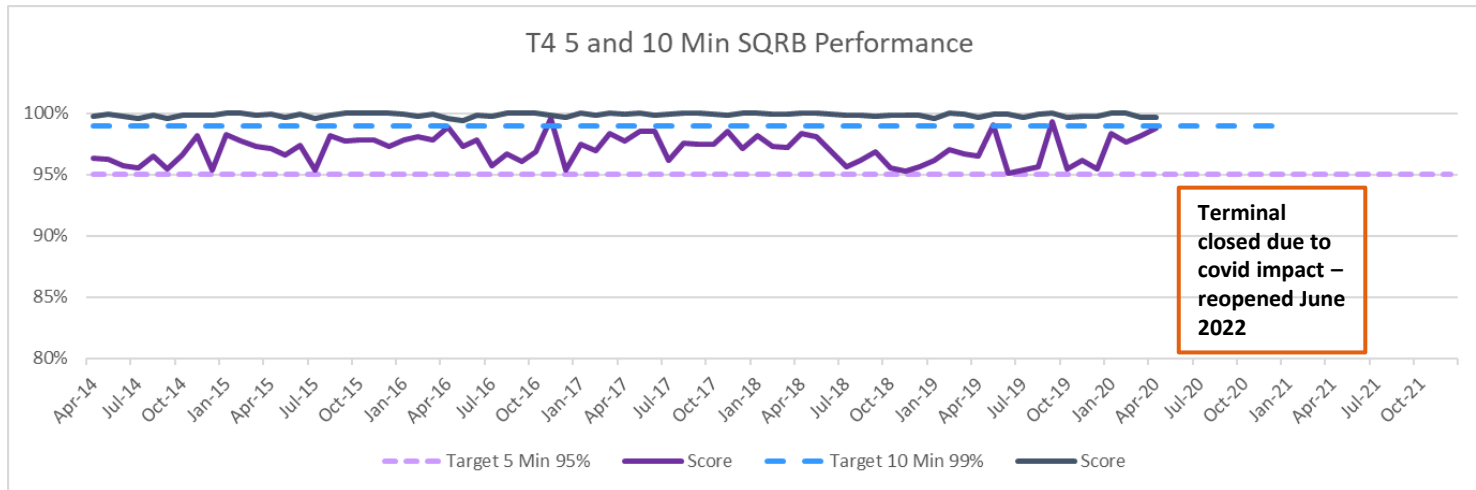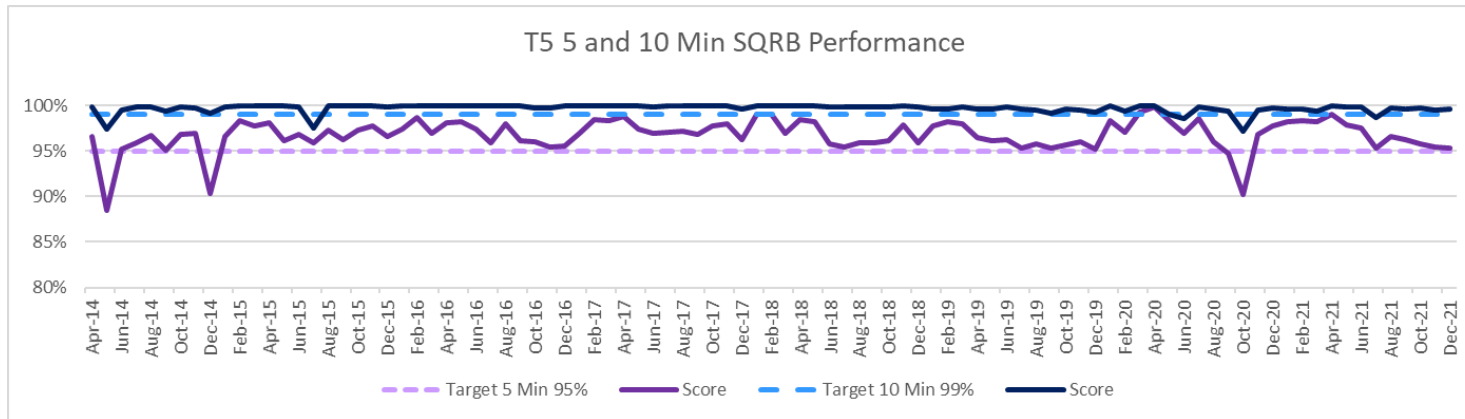
- In T5, HAL has had a few but infrequent failures against the 95% and 99% targets.

- T5 does show some infrequent failures against both targets in the early months of the data analysed above. T5 failed the 95% target in May 2014 scoring 88.48% and in December 2014, scoring 90.37%. On the 99% target, T5 failed twice pre pandemic in May 2014 and July 2015, scoring 97.42% and 97.52% respectively. T5 has exceeded both targets in every other month up to the start of the Covid pandemic.

- As such the IP target for all Central Search is deemed achievable.

Conclusion	Historic monthly performance across all 4 operational terminal suggests that the targets for H7 are achievable.

Source: HAL data

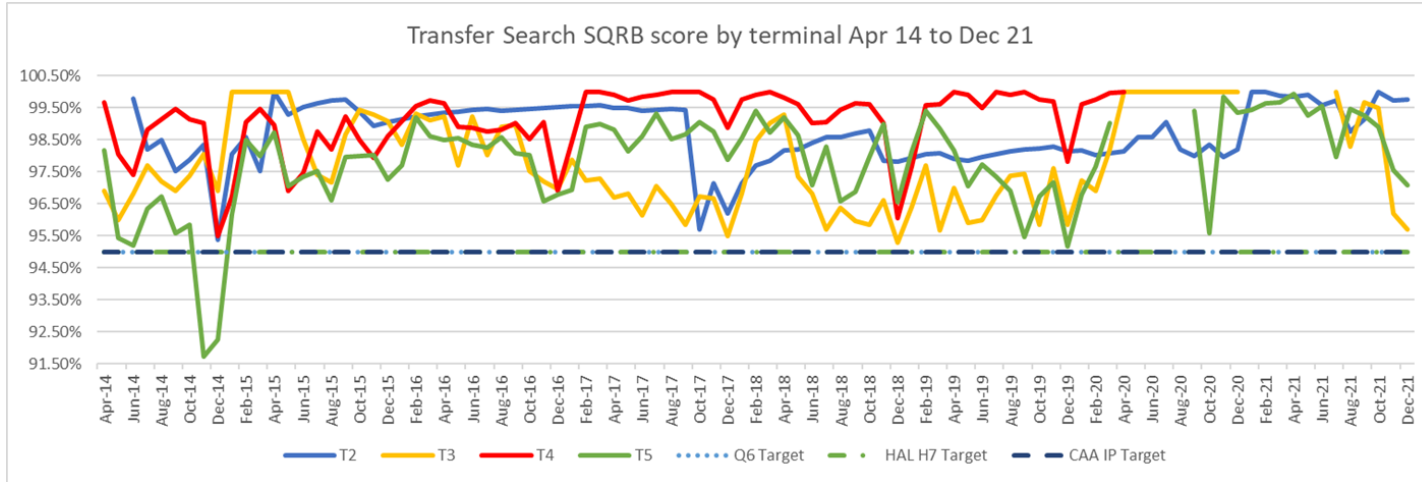# OBR analysis for Staff & Transfer Search

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Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Security – Staff & Transfer Search	95% in under 10 mins	95% in under 10 mins	Capex £747M in current mid case which allows for the full HAL H7 security programme	Y	N	N
Arcadis Summary	HAL has consistently performed above 95% target for staff and transfer search since 2015. Full capital allowance of £747m for the transformation programme allowed for in the CAA Final Proposals.					

Staff Search SQRB score by terminal Apr 14 to Dec 21
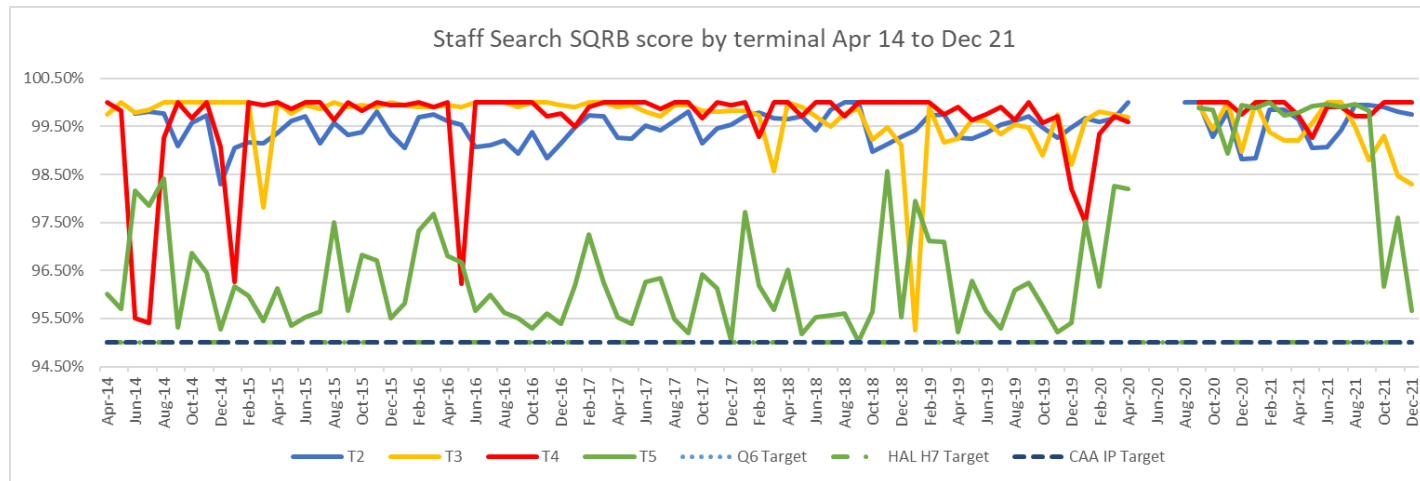
- HAL consistently above 95% target for staff search in T2, T3 and T4 but notably T5 is close to and frequently very close to target.

- If the CAA were to consider setting different targets for individual terminals, then a higher target could be considered for T2, T3 and T4 given the evident disparity in terminal scores as shown in the chart above left.

OBR Target Assessment | Staff & Transfer Security

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Transfer Search SQRB score by terminal Apr 14 to Dec 21

Source: HAL data, Arcadis analysis

- Transfer search has also been largely above target since April 2014 except in T5 where the score fell significantly below target to c92% in Q4 2014. Performance since has been above target.

- Given the IP targets are to be maintained at Q6 levels, they are considered achievable.

Conclusion	IP Targets deemed achievable. As with Central search, the transformation programme will possibly bring disruption and could result in lower scores during the time of the works. Until such time as new data is available to demonstrate the impact of the investment, then it is not possible for Arcadis to comment any further.

OBR analysis for Security Control Posts

ARCADIS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Security – Control Posts	95% in under 15 mins	95% in under 15 mins	Capex £747M in current mid case which allows for the full HAL H7 security programme	Y	N	N
Arcadis Summary	Performance against target has been consistently above the Q6 target with the only failures occurring during Q4 2020 in both Southside and Cargo areas from data received from HAL. Full capital allowance of £747m for the transformation programme allowed for in the CAA Final Proposals.					

Southside SQRB Performance

94.20% 92.70% 93.54% in Oct to Dec 2020 on Southside
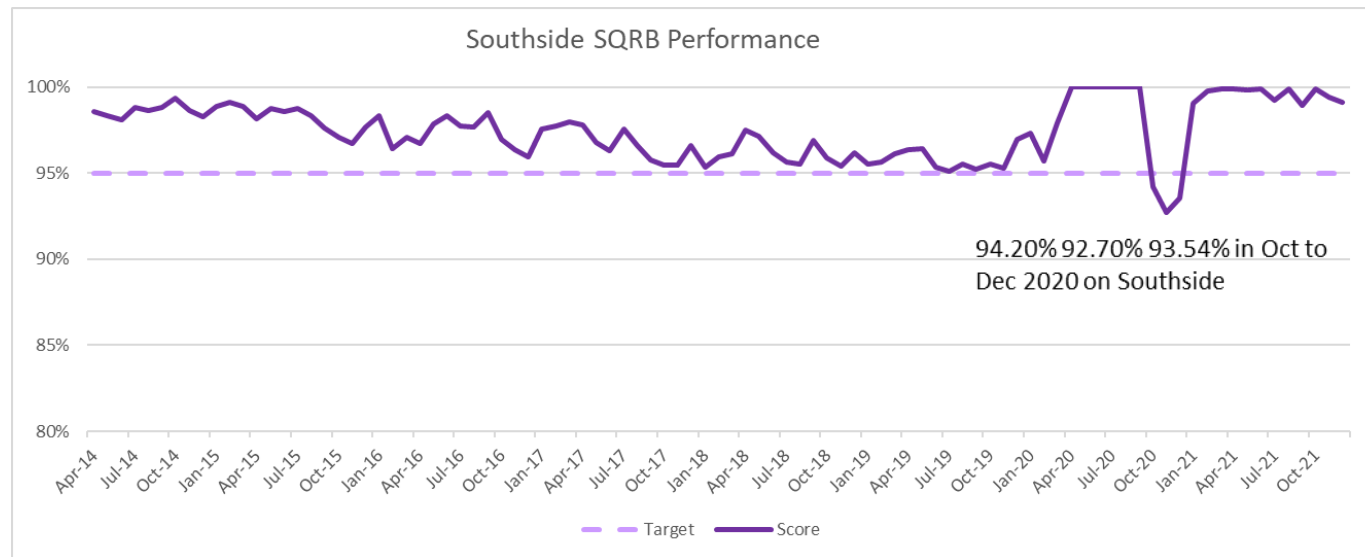
- As with Central Search, performance against target has been consistently above the Q6 target with the only failures occurring during Q4 2020 in both control post areas.

- As this failure was during the pandemic period it has not being considered a material issue for target setting into H7.

OBR Target Assessment | Control Posts

Cargo SQRB Performance

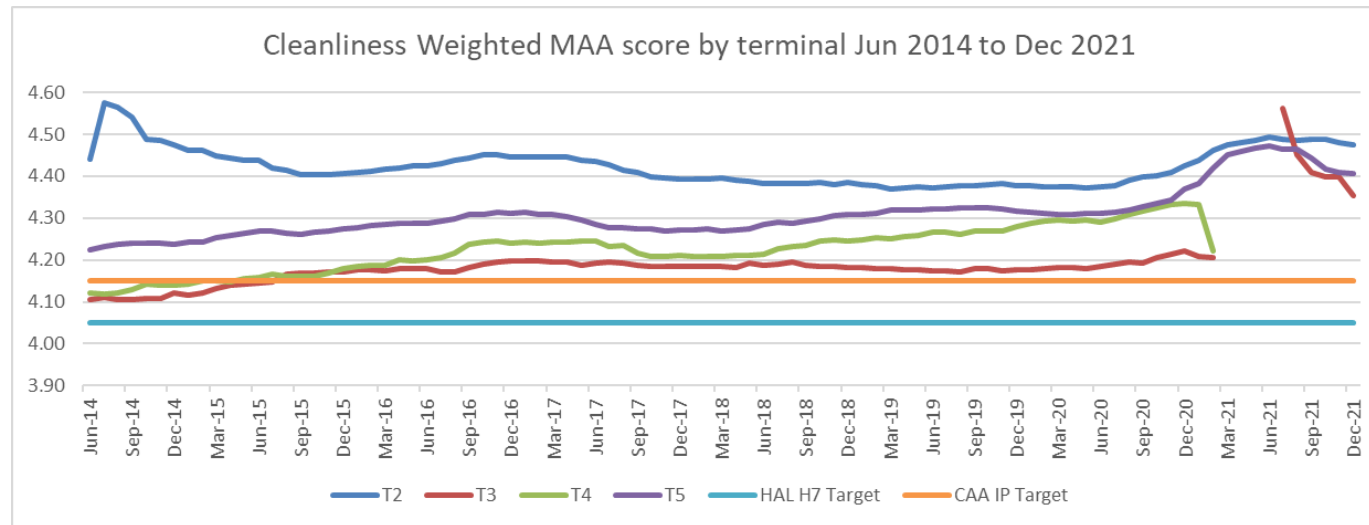92.61% 94.29% in cargo Nov and Dec 2020
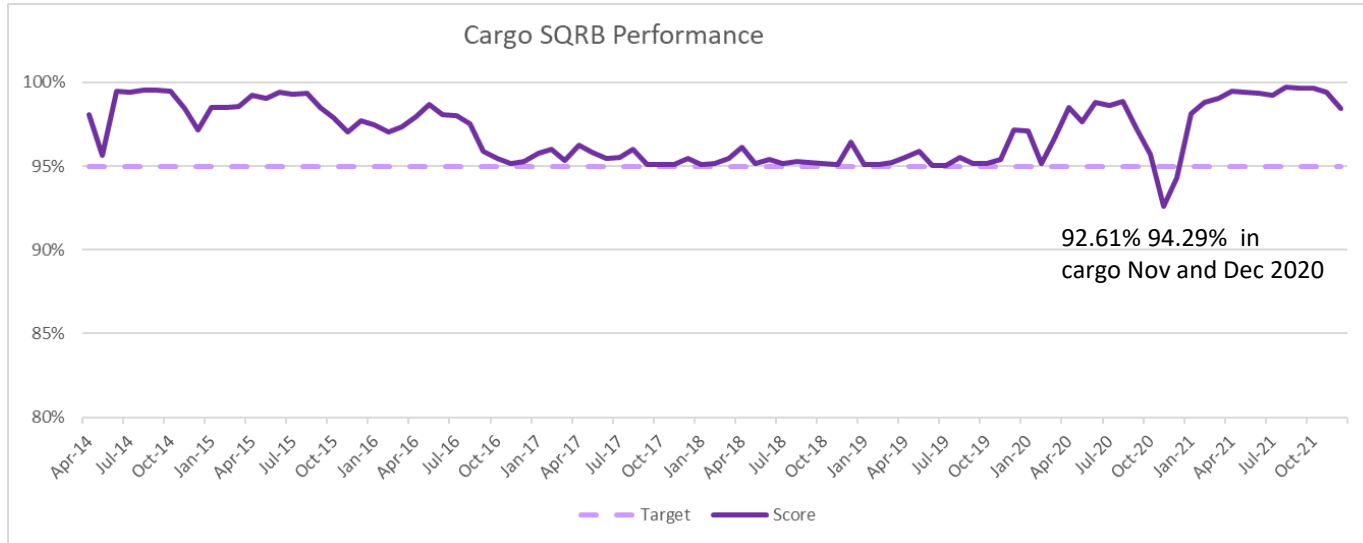
- Cargo, whilst being above target, has operated very close to or on target for approximately 3 years from October 2016 to October 2019.

- The failure in Q4 2020 was during the pandemic period and as such it has not being considered a material issue for target setting into H7.

- The IP targets based on the data shown left, are therefore considered achievable.

Conclusion	IP Targets deemed achievable. Until such time as new data is available post transformation project completion demonstrating the impact of the investment, then it is not possible for Arcadis to comment any further.

Source: HAL data

OBR analysis for Cleanliness

ARCADIS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Cleanliness	4.05	4.15	2022 Covid ESO is £5.66M.	Y	Y Range: 4.15-4.25	N
Arcadis Summary	In 2022 HAL will benefit from a Covid enhanced service overlay of £5.66M. This will no longer be available after 2022. The H7 IP measure of 4.15 on a MAA basis would have been exceeded every year since Q4 2015. Airline engagement has acknowledged this disparity in scores. Perceptions on cleanliness appear to be changing with passengers more aware of their environment due to the pandemic.					

Cleanliness Weighted MAA score by terminal Jun 2014 to Dec 2021

Source: HAL data, Arcadis analysis - **It should be noted that due to Covid, reporting and sample sizes have been compromised, so as an example the T4 score in February 2021 is not considered reliable as the sample size in March 2020 was too small to be statistically relevant.**
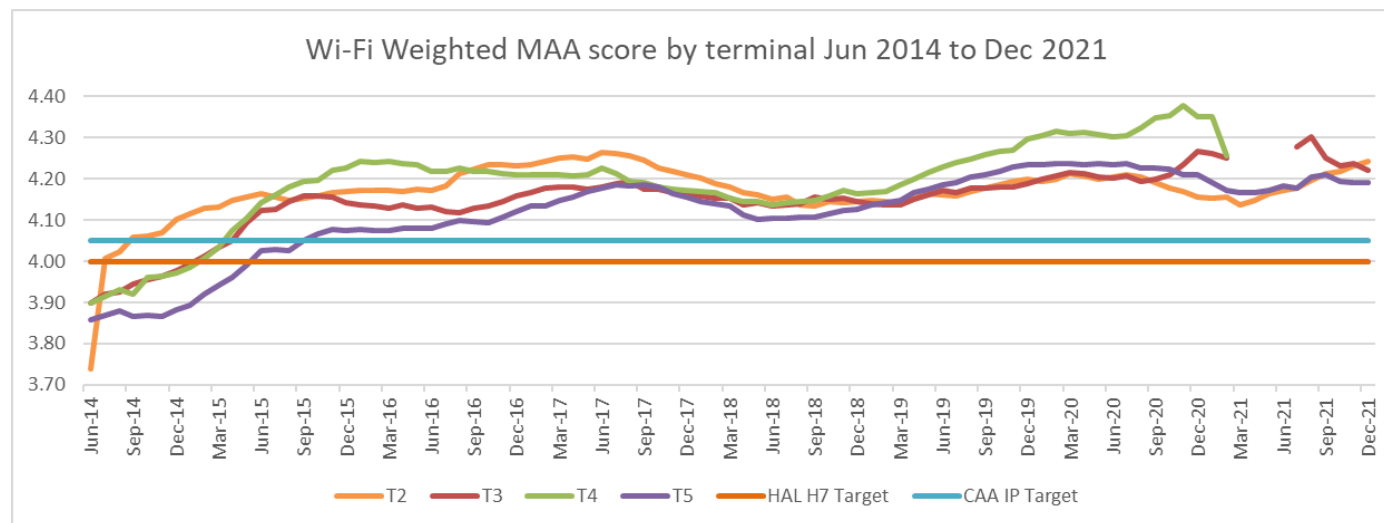
- The target proposed by HAL at 4.05 would have been exceeded in each terminal in every month since Q2 2014 on an MAA basis suggesting this target is too low and therefore justifiably a subject for stretch for H7.

- When considering the IP target on a MAA basis, the IP target of 4.15 would have been exceeded every month since Q4 2015 across all terminals.

- T3 is the lowest performing terminal scoring between 4.15 to 4.20 for much of the period Q4 2015 to the period of the pandemic. Placing too much emphasis on the operational period during the pandemic should be avoided as it is likely to not be reflective of true performance levels.

Conclusion	The CAA IP target is considered achievable and could be considered for stretch over the course of H7. If the CAA were to consider targets by individual terminals, then consideration could be given to setting higher targets for T2, T4 and T5 based on the MAA data as shown above.

OBR analysis for Wi-Fi

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Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Wi-Fi	4.00	4.05	Capex for Wi-Fi upgrade understood to be within Asset Mgt and Compliance of £1,600M for the IT & Cyber programme.	Y	Y Range: 4.05-4.15	N
Arcadis Summary	Mid case allows for £1.6bn of Capex for asset management and compliance spend against a HAL H7 request of c£1.7bn. The reduction of £0.1bn is down to phasing with the additional funding moving into H8. It is reasonable to conclude that with some further prioritisation, HAL can accommodate the Wi-Fi investment as noted within their IT Cyber programme to upgrade the service and provide more bandwidth and end user speed. The risk of service degradation would only exist should investment in the Wi-Fi not be made. Whilst scores since the pandemic began have been above CAA IP target at 4.05, this would have been in part due to lower passenger numbers and so bandwidth and coverage would not have been an issue. As passenger numbers return to pre pandemic levels which appears to be happening faster than perhaps expected previously, then the investment may be needed to maintain the scores at and above 4.05.					

Wi-Fi Weighted MAA score by terminal Jun 2014 to Dec 2021

Legend: T2, T3, T4, T5, HAL H7 Target, CAA IP Target

- The proposed IP target of 4.05 is considered achievable for HAL as it has been exceeded every month since Q4 2015 as shown in the MAA chart to the left.

- It is clear from the chart data, that when satisfaction starts to dip, then this coincides with a period where investment has not been made in the Wi-Fi capacity and coverage. Satisfaction levels then rise again after investment has been made. The scores for Wi-Fi are also quite consistent across the terminals with no obvious outliers indicating the service is reasonably consistent across the airport terminal campus.
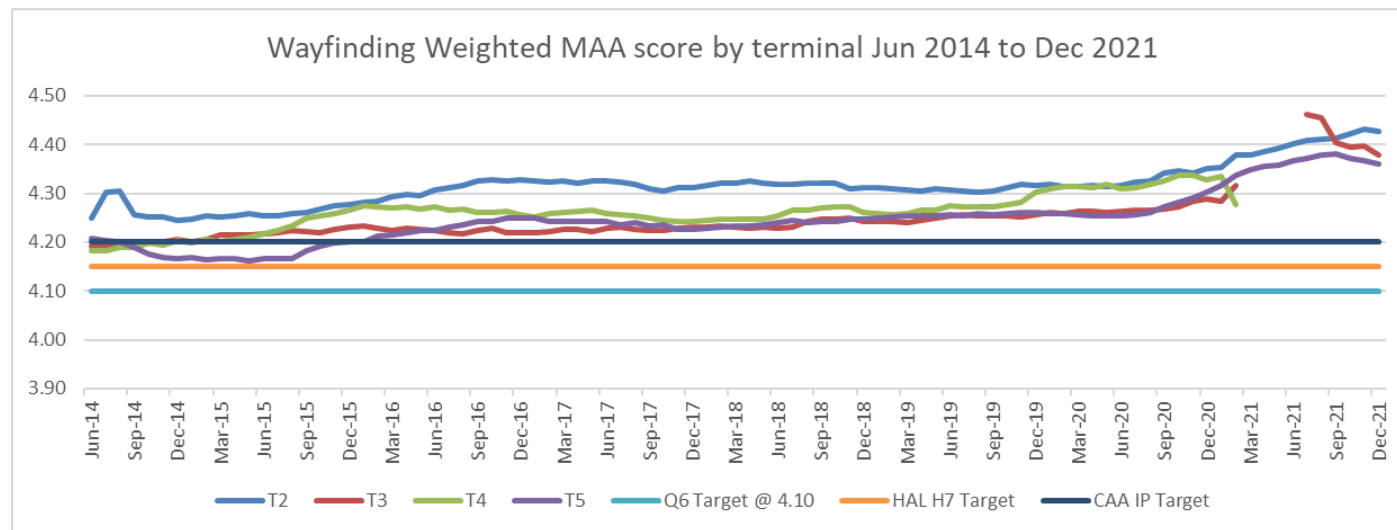
Source: HAL data, Arcadis analysis - **It should be noted that scores after March 2020 have been compromised due to surveys being suspended due to Covid restrictions so do not reflect a full MAA.**

Conclusion	The IP target is considered achievable and based on investment happening and historic performance, outperformance during H7 is realistic within a range of 4.05 to 4.15 as evidenced by the MAA data above. Passenger expectations on Wi-Fi continue to increase and is now seen as an expectation that the service will be good. The historic performance clearly shows a consistent dip in scores in the latter years after investment is made meaning any investment in Wi-Fi may likely need to be on a regular cyclical basis to align with passenger needs and expectations in order to maintain scores at or above target level, proactively upgrading the service prior to any material drop off in satisfaction.

OBR analysis for Wayfinding

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Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Wayfinding	4.15	4.20	-	Y	Y Range: 4.20-4.25	N
Arcadis Summary	HAL has proposed as part of its H7 plans that Personal Electronic Device (PED) wayfinding is what its customers will require in order to further enhance the Wayfinding proposition at LHR. HAL has achieved multiple bonuses on Wayfinding over recent years suggesting this is an area that HAL performs very well in even when passenger numbers were high prior to the pandemic. Insufficient evidence has been presented to Arcadis as part of the Capex workstream to articulate the case for wayfinding investment. Airline community consider the target at 4.20 to not only be achievable but also proposed 4.30 based on the November 2021 report.					

Wayfinding Weighted MAA score by terminal Jun 2014 to Dec 2021

Legend: T2, T3, T4, T5, Q6 Target @ 4.10, HAL H7 Target, CAA IP Target

- When looking at the MAA scores by terminal, all terminals have been above the CAA IP target of 4.20 since Q2 2016, indicating a broad and steady upward trajectory in performance albeit not material year on year.

- On a MAA basis, HAL would have exceeded its own H7 target of 4.15 every year since June 2014 based on the data shared by HAL.

- The chart left suggests there is scope for considering Wayfinding for further stretch.
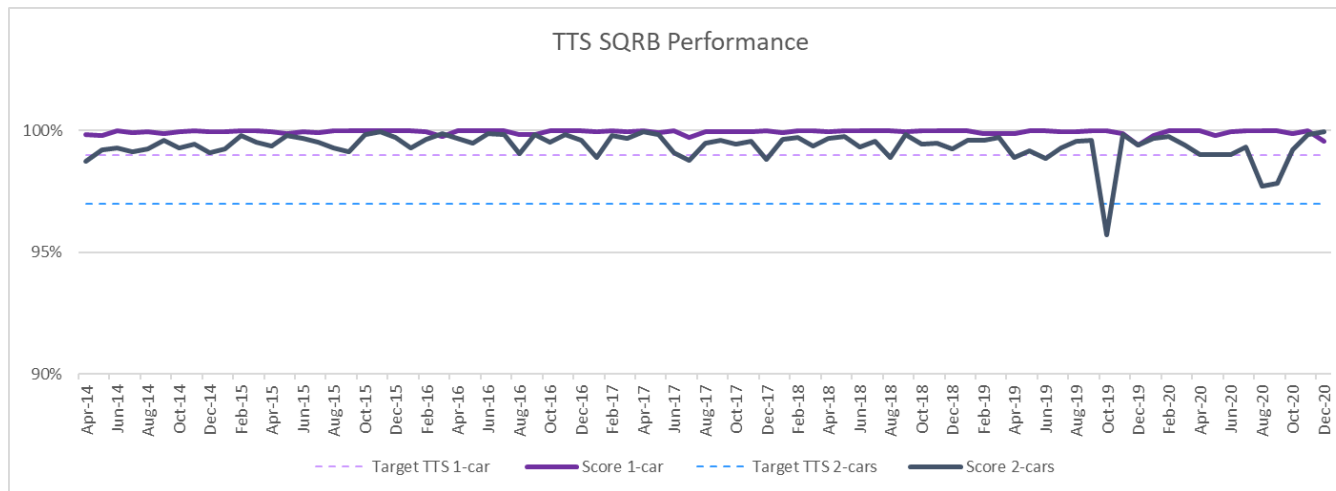
Source: HAL data, Arcadis analysis - **It should be noted that scores after March 2020 have been compromised due to surveys being suspended due to Covid restrictions so do not reflect a full MAA.**

Conclusion	IP target is deemed achievable and further stretch is possible within suggested range based on data shared by HAL and as seen in the chart above. Whilst the airlines have proposed an even higher target at 4.30, this would require a material uplift across all 4 operational terminals that is not supported by the data shared by HAL. The target as proposed by HAL at 4.15 would have been achieved every month since Q4 2014 on a MAA basis. The HAL target at 4.15 is therefore considered too low based on evidence shared by HAL.

OBR analysis for Terminal Transit System

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Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Availability of Terminal Transit System 1 car 2 car	 99% 97%	 99% 97%	Included in £1.6bn of Asset Mgt and Compliance Capex Resilience ESO of £35m also available	 Y Y	 N Y Range 97%-98%	 N N
Arcadis Summary	£1.6bn Capex has been allowed for overall Asset Maintenance and Compliance for HAL in H7 including for the support, ongoing maintenance and support for the TTS. The Resilience ESO of £35m is also included. Historic performance has been strong against target with only an isolated breach in late 2019 on the 2-car target which resulted in penalties for HAL.					

TTS SQRB Performance

Legend: ---- Target TTS 1-car ── Score 1-car ---- Target TTS 2-cars ── Score 2-cars

Source: HAL data, Arcadis analysis

- Terminal Transit System (TTS), availability has been above both targets every month since April 2014 based on data shared by HAL with the isolated exception of Q4 2019 when HAL incurred a failure and penalties exceeding £600k.
- IP targets at 99% availability for 1 car and 97% availability for 2 car therefore deemed achievable.
- No scope for stretch or material outperformance on 1 car given the target is already at 99%. 2 car could be outperformed at 97% given the data provided by HAL and a range of 97%-98% could be considered. The breach in Q4 2019 was significant and should not be ignored but it would appear to be somewhat of an isolated occurrence based on the data shared by HAL.

Conclusion	IP targets deemed achievable but material outperformance unrealistic given already high target percentages for 1 car. 2 car historic performance coupled with investment in H7 would indicate that HAL could outperform the existing 2 car target and as such stretch is deemed feasible and a range of 97% to 98% is suggested based on proposed investment and historic performance analysis as shown in the chart above.

OBR analysis for Check-in Availability

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Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Availability of Check-in infrastructure	N/A	N/A	Included as part of the £35m Resilience ESO	N/A	N/A	N/A
Arcadis Summary	Suggested range for this target is at c99% based on historic data received from HAL which can be seen in the table below. Data received from HAL only shows historic performance for self service bag drop and CUSS machines for the period from August 2018. Exclusions are being considered. Resilience ESO at £35m allowed for in the FP to assist with this availability measure.					

Check-in Infrastructure Availability

Please Note: The below figures <u>do not</u> include any exceptions where availability sits outside of Heathrow's direct control as it is not possible to apply these to historical data.

CUSS Hardware Availability (NB current service levels are based on incident fix and not availability. New CUSS service will have same availability target as SSBD)

	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20
T2 Average	98.16	98.59	98.07	98.13	99.25															
T3 Average	99.81	99.81	99.95	99.95	99.6															
T4 Average	99.74	99.74	99.8	99.71	100															
T5 Average	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	N/A	N/A	N/A

SSBD Hardware Availability

	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20
Site wide	96.8		99.1		99	98.5	98.53	99.91	99.99	99.99	99.99	98.4	99.13	98.5	99.35	99.31	99.5	99.62	99.42	99.56

SSBD Software (White Label Application) Availability

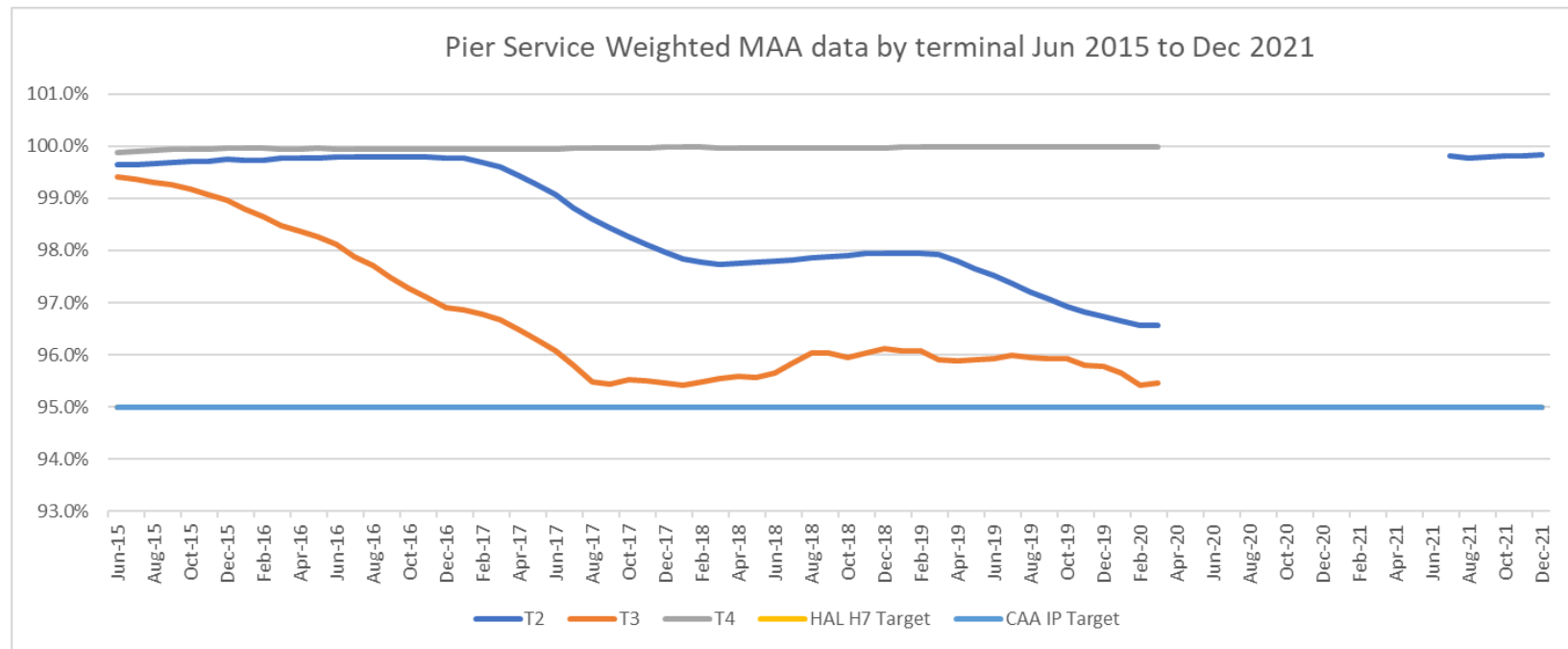|	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20
T2B	n/a	n/a	n/a	n/a	n/a	n/a	n/a	99.34	100	99.99	99.99	100	100	100	100	100	100	100	100	99.99
T2C	100	99.85	100	100	100	100	99.91	99.89	100	100	100	100	100	100	100	100	100	100	100	99.99
T3A	n/a	n/a	n/a	n/a	n/a	100	99.86	98.84	100	100	100	100	100	100	100	100	100	100	100	100
T3B	n/a	n/a	n/a	n/a	n/a	n/a	n/a	100	100	100	100	100	100	100	100	100	100	100	100	100
T3C	n/a	n/a	n/a	n/a	n/a	100	99.86	100	100	100	100	100	100	100	100	100	100	100	100	100
T3E	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	100
T3E1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	100
T3F	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	100
T4A	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	100
T5B	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
T5C	n/a	n/a	n/a	n/a	n/a	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
T5D	n/a	n/a	n/a	n/a	n/a	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
T5F	n/a	n/a	n/a	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
T5G	n/a	n/a	n/a	n/a	100	n/a	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Source: HAL data

- This is a new target and as such data gathered by HAL is more limited than the other established measures that have been in place for several years.

- No target therefore currently exists but the data as shown left would suggest that aligning with the other availability targets at 99% would seem achievable.

- The data is only for Common User Self Service (CUSS) and Self-Service Bag Drop (SSBD).

Conclusion	Historic performance based on the limited data seen from HAL suggests a target of 99% is achievable. Given this is a new target and the data set is rather limited, it is not possible at this stage to form a view if this target at 99% could be outperformed. If the target were at 99% then outperformance would not be considered.

OBR analysis for Pier Service

ARCADIS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Pier served stand usage (excl T5)	95%	95%	Included in £35m Resilience ESO	Y	Y Range 95% to 99% based on terminal specific targets	N
Arcadis Summary	Historic performance consistently above target in both T2 and T4 since June 2015. T3 has performed well albeit less consistent than either T2 or T4 and dropping below 9%% only during the period of the pandemic. It should be noted that T5 is out of scope as BA perform their own stand planning activities. Resilience ESO at £35m allowed in FP to provide support to this target.					

Pier Service Weighted MAA data by terminal Jun 2015 to Dec 2021

Conclusion	IP target considered achievable. MAA performance in T4 has been very strong since April 2014 approaching 99%+ every month. T2 has fluctuated between 99%+ to c96.5% in the period reviewed. T3 shows a lower performance level and as such any stretch that is considered for T3 should take into account the current disparity in the historic performance across the 3 operational terminals that HAL controls for pier served stand usage. T5 out of scope, given BA perform their own stand planning.

OBR analysis for Baggage Reclaim

ARCADIS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Baggage Reclaim Availability	99%	99%	Included in current mid case as part of the £35m Resilience ESO	Y	N	N
Arcadis Summary	Historic performance is consistently strong with all terminals exceeding the 99% target since April 2014. The Resilience ESO of £35m is also available for this measure.					

Baggage Reclaim availability Apr 14 to Dec 21 by terminal
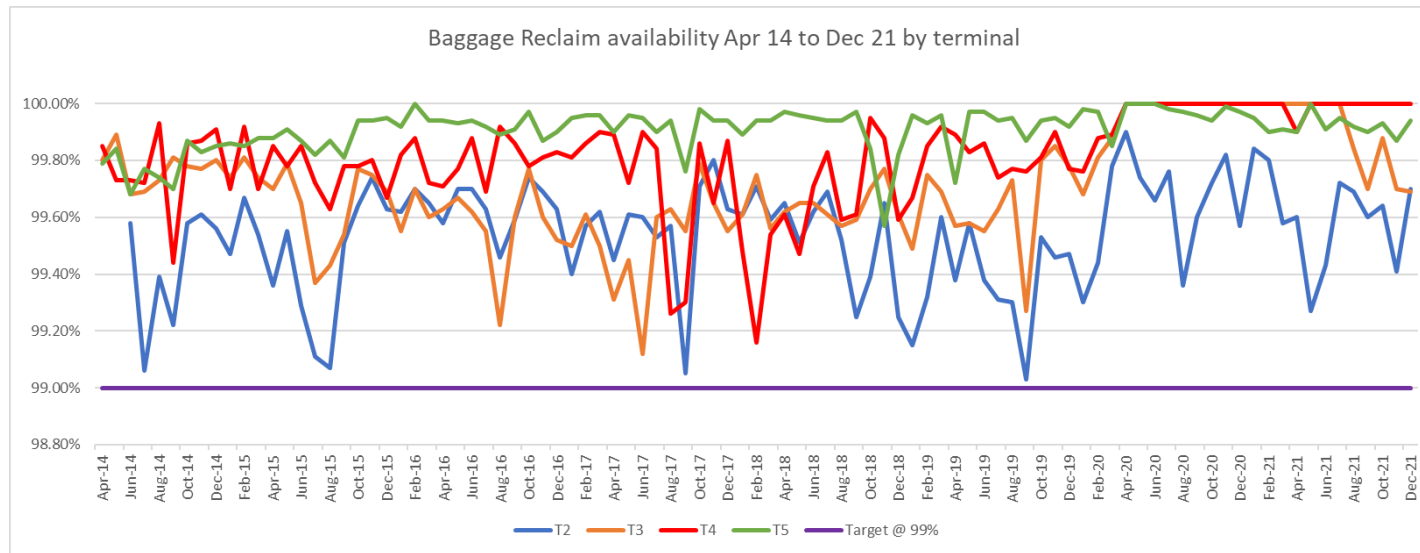
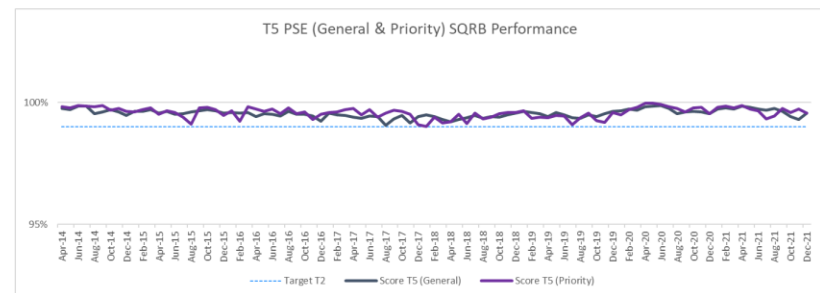- Baggage reclaim availability has been above target at 99% every month since April 2014 based on data shared by HAL.
- IP target at 99% therefore deemed achievable.
- Resilience ESO at £35m allowed for in CAA FP.
- No scope for stretch or material outperformance given the target is already at 99%.

Source: HAL data, Arcadis analysis

Conclusion	Proposed IP target deemed achievable. Outperformance not considered as target already at 99%.

OBR analysis for Stand Availability

ARCADIS

| Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Availability of stands	99%	99%	Included in current mid case as part of the £35m Resilience ESO	Y	N	N
Arcadis Summary	Maintenance of stands included in the ESO of £35m for Resilience in the mid case. Target considered achievable with little scope of stretch considering the target is already 99% but historic performance has been consistently strong with isolated breaches in T3 in Nov 15 at 98.47% and then again in Q2 2021 at c.98.51%. T2 and T5 above target every month since April 2014, with T4 only experiencing breaches during Q4 2020 and Q3 2021 which will likely be directly related to terminal disruption owing to the impact of Covid 19.					
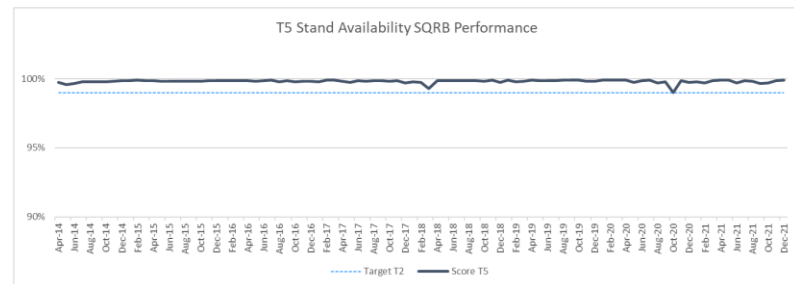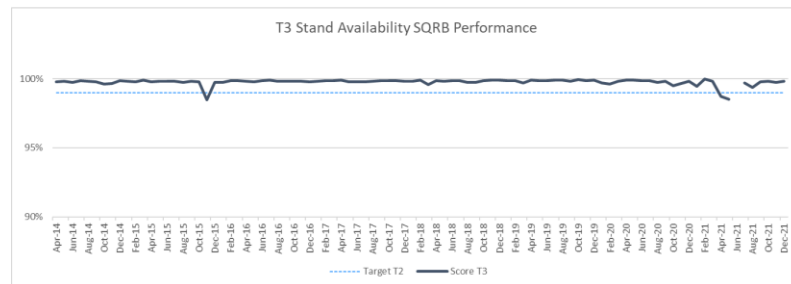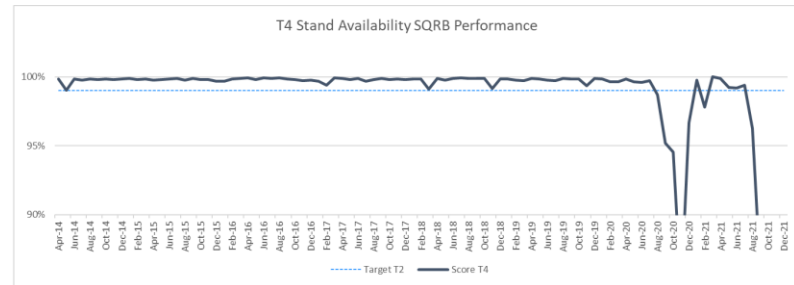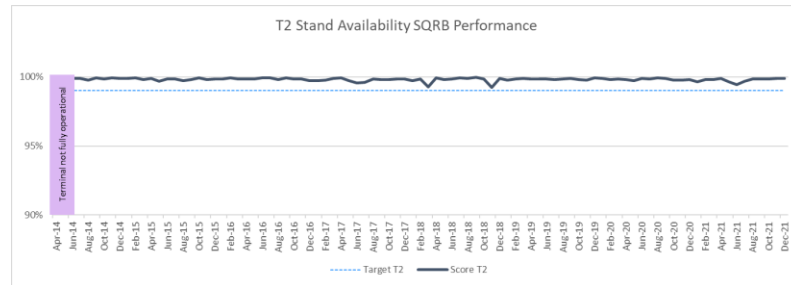
- Stand availability has been above target at 99% most months since April 2014 based on data shared by HAL recognising T2 was not fully operational in Q2 2014.
- It is clear from the data above that there have been isolated failures in T3 and notably T2 but the T3 failure occurred back in Q4 2015 and the T2 failures occurred during the pandemic and are likely driven by terminal closures.
- IP target at 99% therefore deemed achievable.

Conclusion	Proposed IP target deemed achievable. Outperformance not considered as target already at 99%.

OBR analysis for Lifts Escalators & Travellators (LEPC) ARCADIS

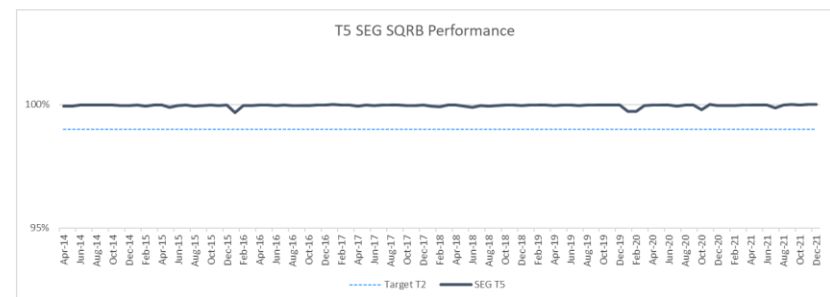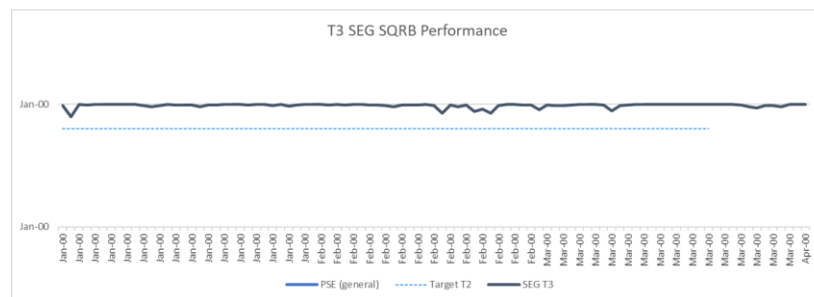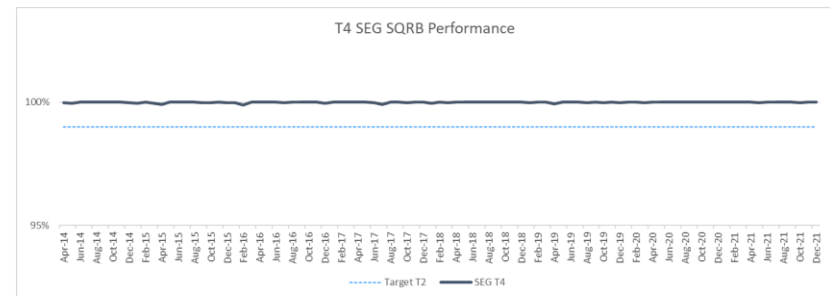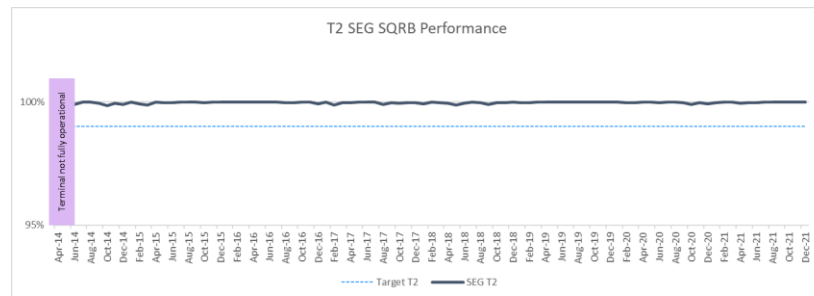| Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Availability of Lifts Escalators and Travellators	99%	99%	Included in current mid case as part of the £35m Resilience ESO	Y	N	N
Arcadis Summary	Funding available from Resilience Enhanced Service Overlay (ESO) at £35m for H7. Historic performance on PSE, now LEPC, has been above target since April 2014 every month across all 4 terminals with the one exception of March 2021 in T3 Priority where it dipped to 98%.					
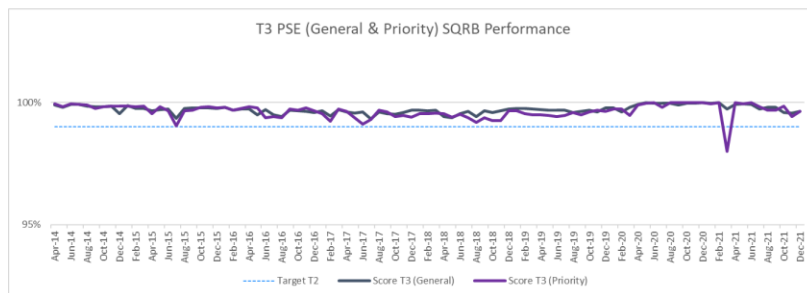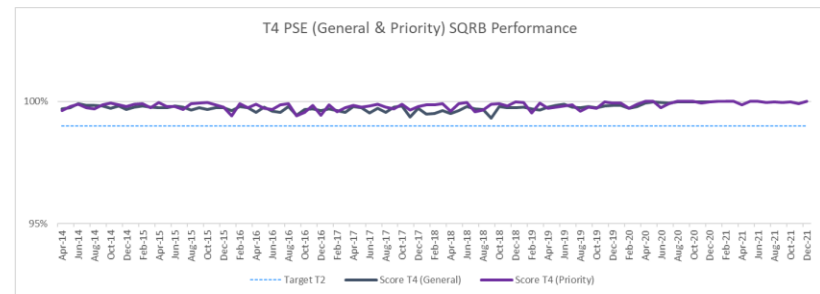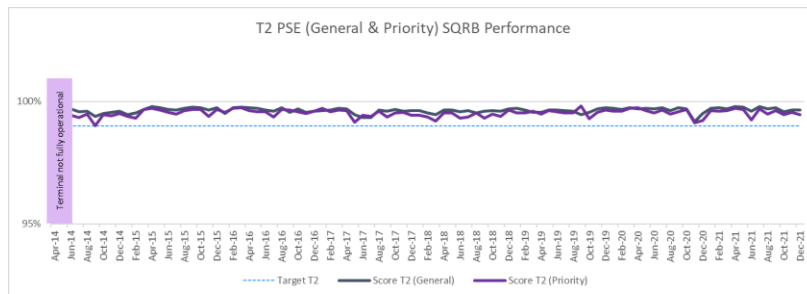
- Lifts Escalators Passenger Circulation (LEPC), previously PSE, availability has been above target at 99% every month since April 2014 except for an isolated failure in T3 in Q1 2021, based on data shared by HAL recognising T2 was not fully operational in Q2 2014. T3 failure not considered significant for purposes of target setting.
- IP target at 99% therefore deemed achievable.

Conclusion	Proposed IP target deemed achievable. Outperformance not considered as target already at 99%.

OBR analysis for SEGS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Availability of SEGS	99%	99%	Included as part of the £35m Resilience ESO	Y	N	N
Arcadis Summary	The Resilience ESO at £35m has been included in the opex for the current mid case, and the target has been achieved every month since April 2014					

T2 SEG SQRB Performance

T4 SEG SQRB Performance

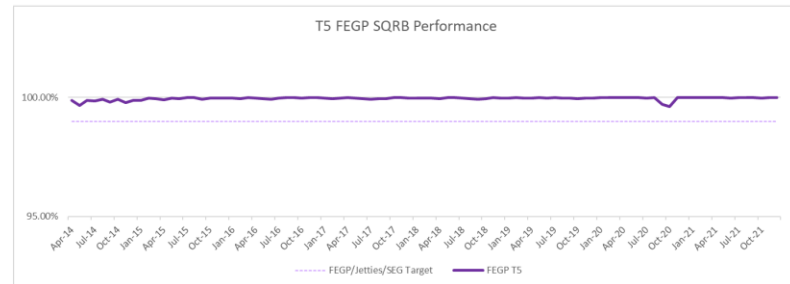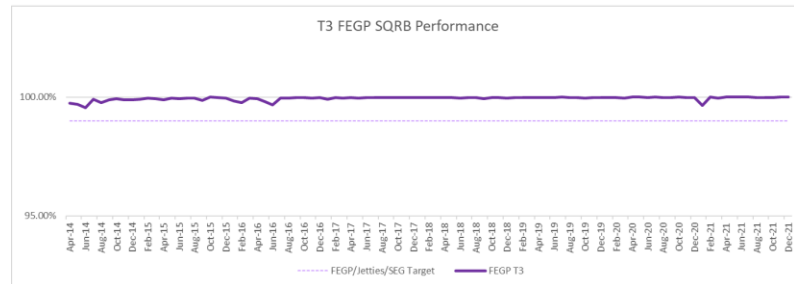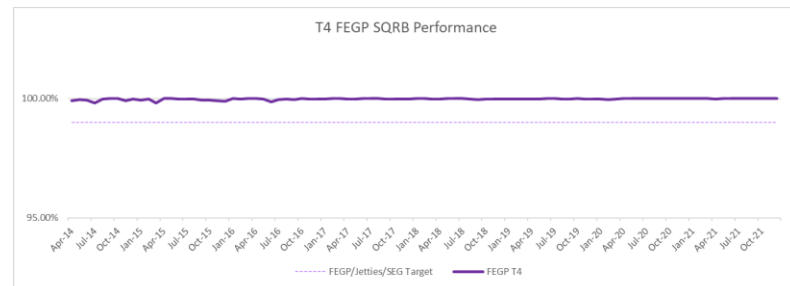T3 SEG SQRB Performance
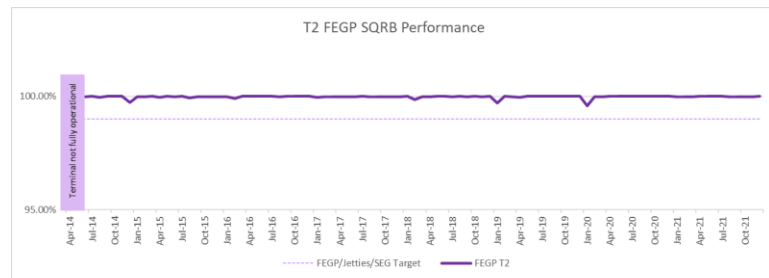

T5 SEG SQRB Performance

- Stand Entry Guidance Systems (SEGS) availability has been above target at 99% every month since April 2014 based on data shared by HAL recognising T2 was not fully operational in Q2 2014.
- IP target at 99% therefore deemed achievable.

Conclusion	Proposed IP target deemed achievable. Outperformance not considered as target already at 99%.

OBR analysis for FEGP

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Availability of FEGP	99%	99%	Included as part of the £35m Resilience ESO	Y	N	N
Arcadis Summary	The Resilience ESO at £35m has been included in the Opex for the current mid case, and the target has been achieved every month since April 2014					

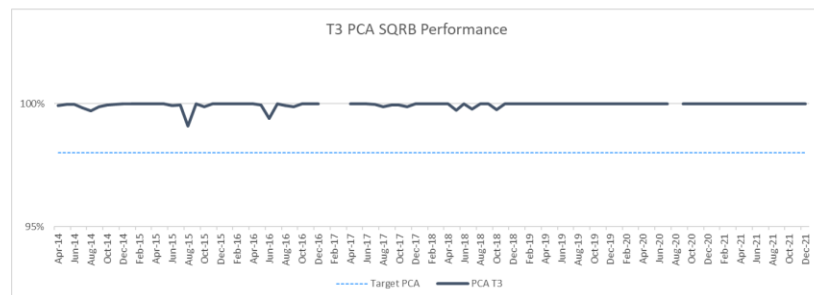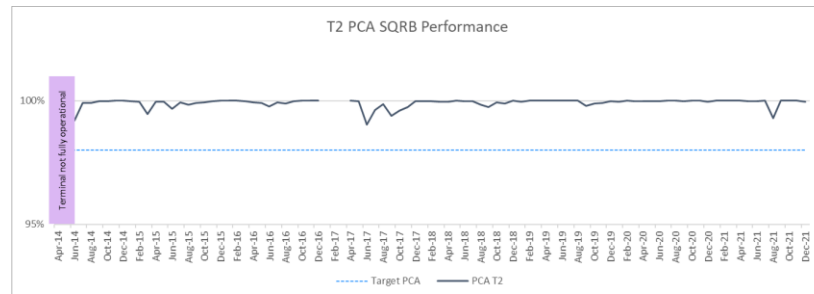

Source: HAL data, Arcadis analysis

- Fixed Electric Ground Power (FEGP), availability has been above target at 99% every month since April 2014 based on data shared by HAL recognising T2 was not fully operational in Q2 2014.
- IP target at 99% therefore deemed achievable.

Conclusion	Proposed IP target deemed achievable. Outperformance not considered as target already at 99%.

OBR analysis for PCA

ARCADIS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Availability of PCA	98%	98%	£188m Capex for Carbon & Sustainability (C&S) and £35m Resilience ESO also available.	Y	Y Range: 98%-99%	N
Arcadis Summary	Full C&S Capex allowance of £188m in H7 proposed which enables the upgrade to PCA to take place during H7. Further Opex is provided by way of the Resilience ESO at £35m. Based on the data shared by HAL, HAL has exceeded the historic target of 98% every month since 2014. Despite this, the current product is considered sub optimal by the airline community and despite being "available" is often not used as does not perform adequately at aircraft turnaround. The H7 capital project to upgrade the PCA product will involve removing the hoses from the underside of the jetties and place them at the head of stand and will also upgrade the air units themselves which will then generate a superior output which will also be more versatile based on aircraft type and airframe composition.					

T2 PCA SQRB Performance

- Pre-Conditioned Air (PCA) availability has been above target at 98% every month since April 2014 based on data shared by HAL recognising T2 was not fully operational in Q2 2014.
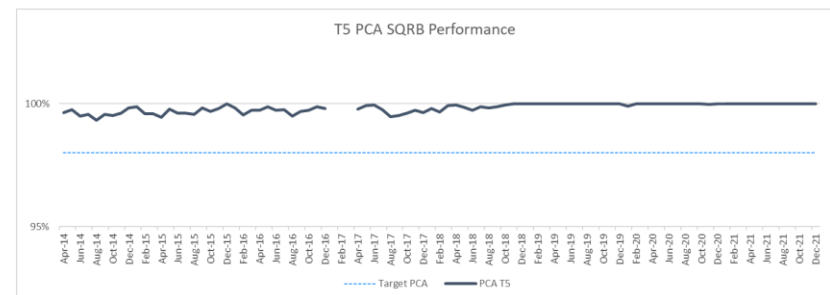- IP target at 98% therefore deemed achievable.
- Given that the carbon and sustainability capex allowance is in the CAA mid case for the FP, stretch to 99% could be considered based on the new investment from the Carbon and Sustainability Programme and consistent outperformance over the last c8 years as shown above.

T3 PCA SQRB Performance

T5 PCA SQRB Performance
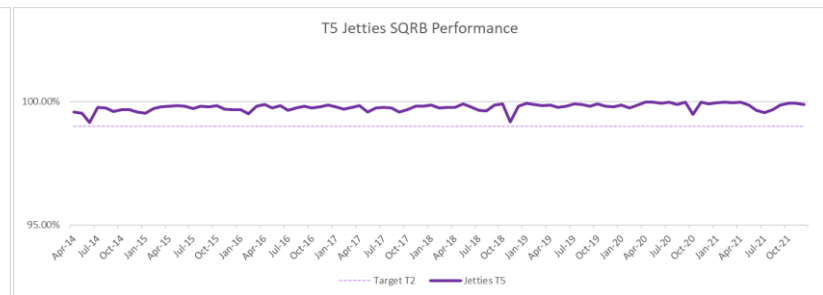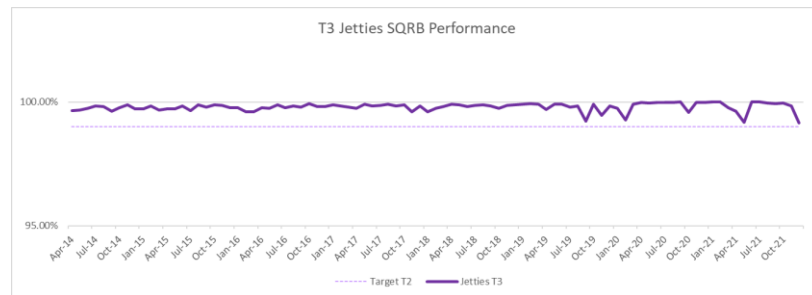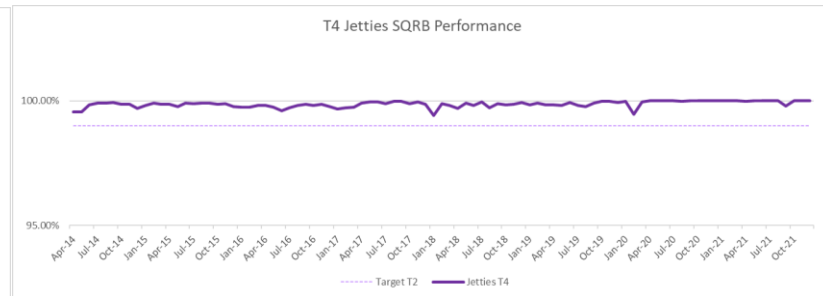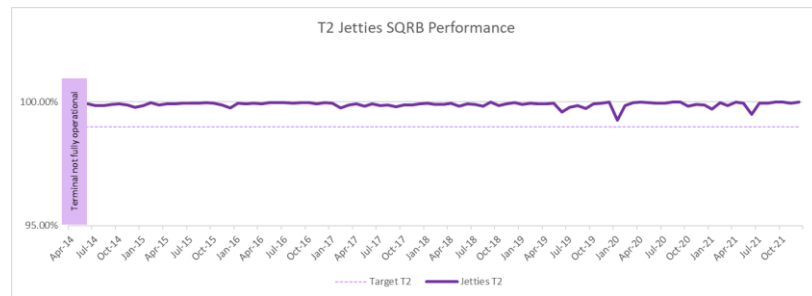
Conclusion	IP target considered achievable and realistic scope for outperformance and stretch as consistently scoring at above 98% during Q6 and PCA will attract new funding in H7 via the Carbon and Sustainability programme as part of the CAA mid case capex allowance. A target of 99% would also bring this measure into alignment with the other stand facilities measures.

OBR analysis for Jetties

ARCADIS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Availability of Jetties	99%	99%	Included as part of the £35m Resilience ESO	Y	N	N
Arcadis Summary	The Resilience ESO at £35m has been included in the Opex for the current mid case, and the target has been achieved every month since April 2014					

T2 Jetties SQRB Performance

T4 Jetties SQRB Performance

T3 Jetties SQRB Performance

T5 Jetties SQRB Performance

- Jetties availability has been above target at 99% every month since April 2014 based on data shared by HAL.
- IP target at 99% therefore deemed achievable.
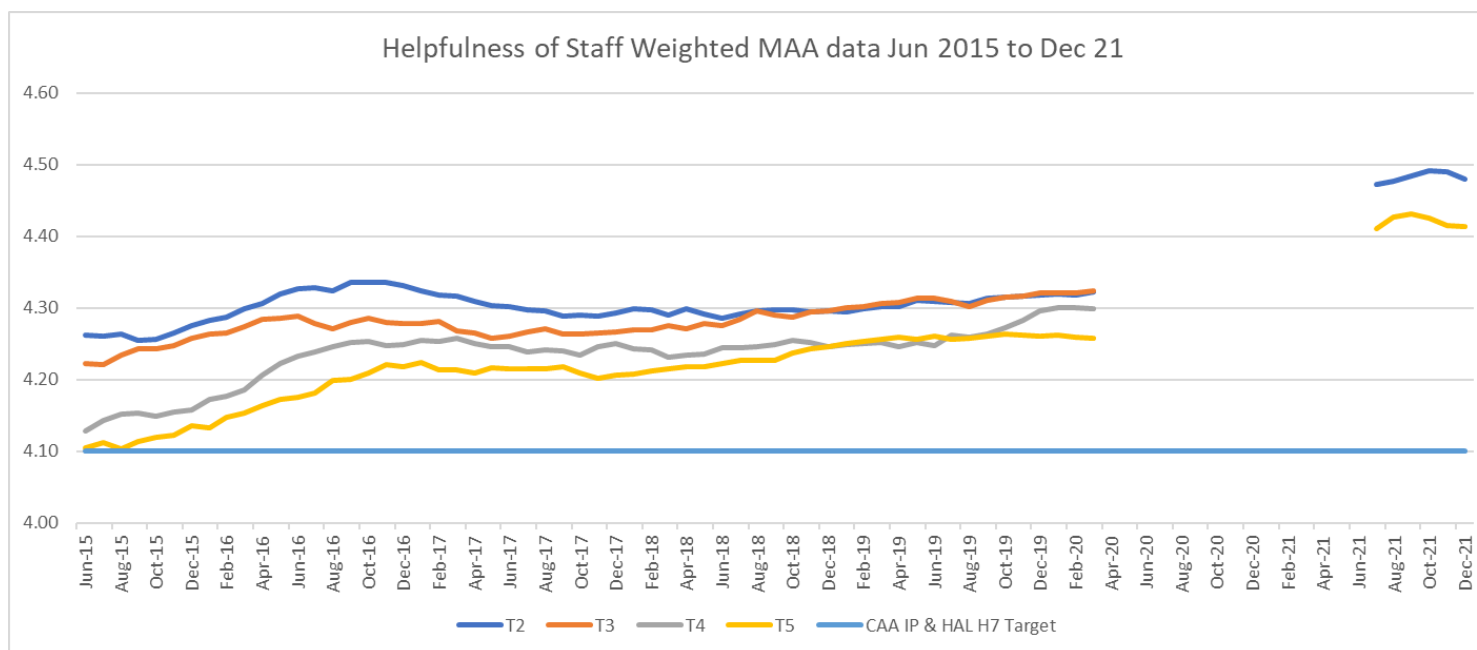
Source: HAL data, Arcadis analysis

Conclusion	Proposed IP target deemed achievable. Outperformance not considered as target already at 99%.

OBR analysis for Helpfulness of Security Staff

ARCADIS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Helpfulness/attitude of security staff	4.10	4.10	-	Y	Y Range 4.10 to 4.25	N
Arcadis Summary	**HAL and CAA targets are aligned for H7. Performance has been above 4.10 since June 2015 so would suggest some stretch is possible for this reputational perception based measure. T5 and T4 have generally been perceived as the lower scoring terminals. There is the potential for disruption during the transformation programme which could have a knock on impact on this measure.**					

Helpfulness of Staff Weighted MAA data Jun 2015 to Dec 21

Legend: T2, T3, T4, T5, CAA IP & HAL H7 Target

Source: HAL data, Arcadis analysis - **The data is specifically for Helpfulness/courtesy of staff and is part of the wider Security (Average) score based on data received from HAL, which also includes measures such as Waiting time, Care taken with belongings and Efficiency of process. Data during the pandemic is not considered as representative of normal operations and any surveys conducted in this time around March 2020 are likely to have been conducted using small sample sizes.**

Conclusion	**HAL and CAA targets are the same. The target at 4.10 is considered achievable based on historic performance as shown in the data above. The measure could be considered for stretch in the range 4.10 to 4.25 based on the MAA data above.**

OBR analysis for PRM

ARCADIS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
PRM overall satisfaction	4.00	4.00	Funded through Other Regulated Charges (ORC)	Y	N	Y
Arcadis Summary	Whilst recent scores during the pandemic period are above the IP target of 4.00, there are material operational challenges that are not apparent when viewing the data in isolation. There is as an example, the ongoing issue of pre notifications v non notified passengers, which continues to cause delays to passengers who may have booked the service, with wait times for some passengers being in excess of 75 minutes. It is however, acknowledged that wider industry challenges around the recruitment of staff for the PRM operator is a genuine challenge. The risk of degradation on this target is down to these operational and external challenges. It should be noted that PRM is funded through Other Regulated Charges (ORC).					

Overall Special Assistance (SpA) Weighted MAA scores Aug 2016 to Mar 2022
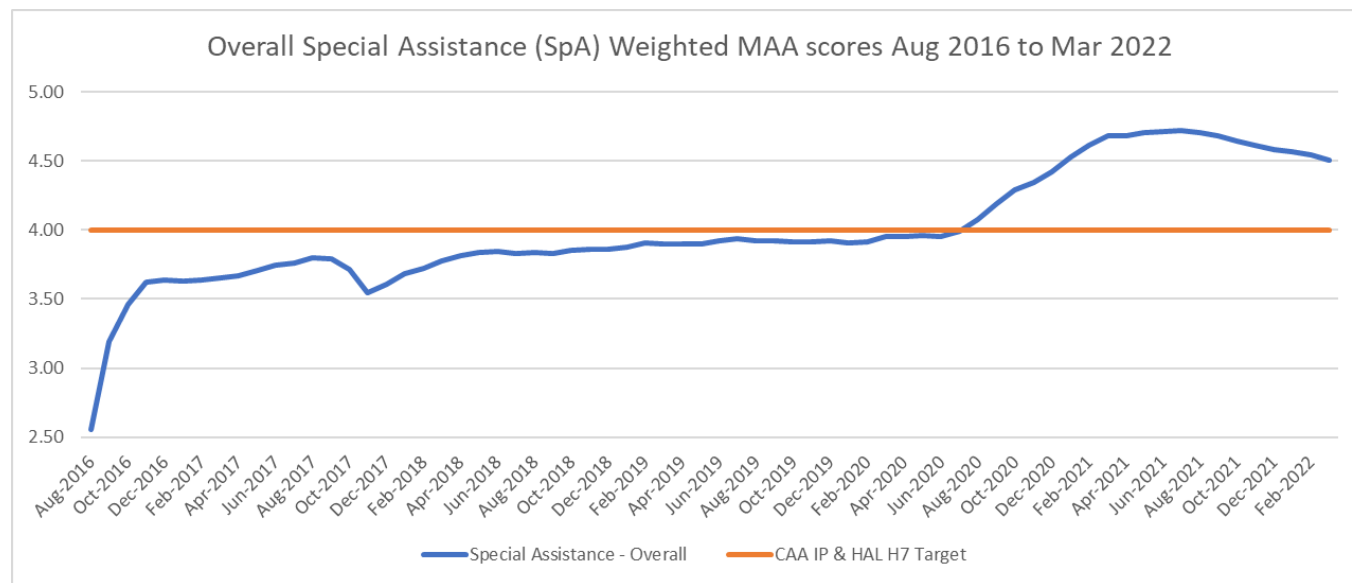
- The recent Overall Special Assistance (SpA) performance during the pandemic shows HAL's performance above the IP target of 4.00.

- These scores however need to be taken in context of a less congested airport and potentially shorter queue times at critical points in the passenger journey such as security and immigration.

- Pre pandemic the scores fluctuated in a broad range of c2.50 to c3.90.

- Since Q2 2021 there has been a downward trend in performance.

Source: HAL data, Arcadis analysis - **Data during the period of the pandemic is not considered as representative of normal operations.**

Conclusion	Continued effective constructive engagement between all stakeholders is seen as essential to improving the current service levels. There is a risk of service degradation should operational improvements not materialise for this reputational target. Overall PRM has shown a general upwards trend in scores but it is acknowledged by all stakeholders that improvements need to be made. If these changes are not made, then this would increase the risk of service degradation for this measure. The IP target of 4.00 is considered achievable.

OBR analysis for Customer Effort (Ease)

ARCADIS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Customer Effort (ease)	91%	N/A	-	N/A	N/A	N/A
Arcadis Summary	Target provided by HAL along with limited data to fully analyse the target proposed by HAL.					

Perception of Ease of Journey

Source: Departures and Arrivals QSM

Departures			
		Enter H7 attribute	
Key Drivers of Ease	Reg. Coefficient	change	Impact
Wayfinding	0.098	0.10	0.010
Airport staff helpfulness	0.080	0.01	0.001
Safe & Secure	0.041	0.05	0.002
Prediction			**4.48**

Ease - Departures	
2021	
% agreement	mean score
91%	4.47

Arrivals			
		Enter H7 attribute	
Key Drivers of Ease	Reg. Coefficient	change	Impact
Wayfinding	0.070	0.10	0.007
Safe & Secure	0.041	0.05	0.002
Prediction			**4.44**

Ease - Arrivals	
2021	
% agreement	mean score
90%	4.43

	H7 Target		2021 performance	
	% agreement	mean score	% agreement	mean score
Combined Ease of Journey Measure	**91.0%**	**4.46**	**90.5%**	**4.45**

All scores are weighted
Coeff. are based on unweighted 2021 data
Every 0.01 increase in Mean Score is equilavent to a 0.5% in percentage agreement with statement

Source: HAL data

- This is a new target and as such data gathered by HAL is more limited than the other established measures that have been in place for several years.

- No target therefore currently exists but the above data would suggest that the HAL H7 target proposal is pragmatic.

- The % agreement scores as shown left for 2021 at 91% for departures and 90.5% for arrivals form the basis of the 91% target for H7.

Conclusion	Limited data from HAL on which to base any historic judgement and analysis. Arcadis unable to comment further.

OBR analysis for Overall Satisfaction

ARCADIS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Overall Satisfaction	4.26	4.26	-	Y	N	N
Arcadis Summary	Historic performance suggests the IP target is achievable. Limited data on which to comment further on whether stretch is possible.					
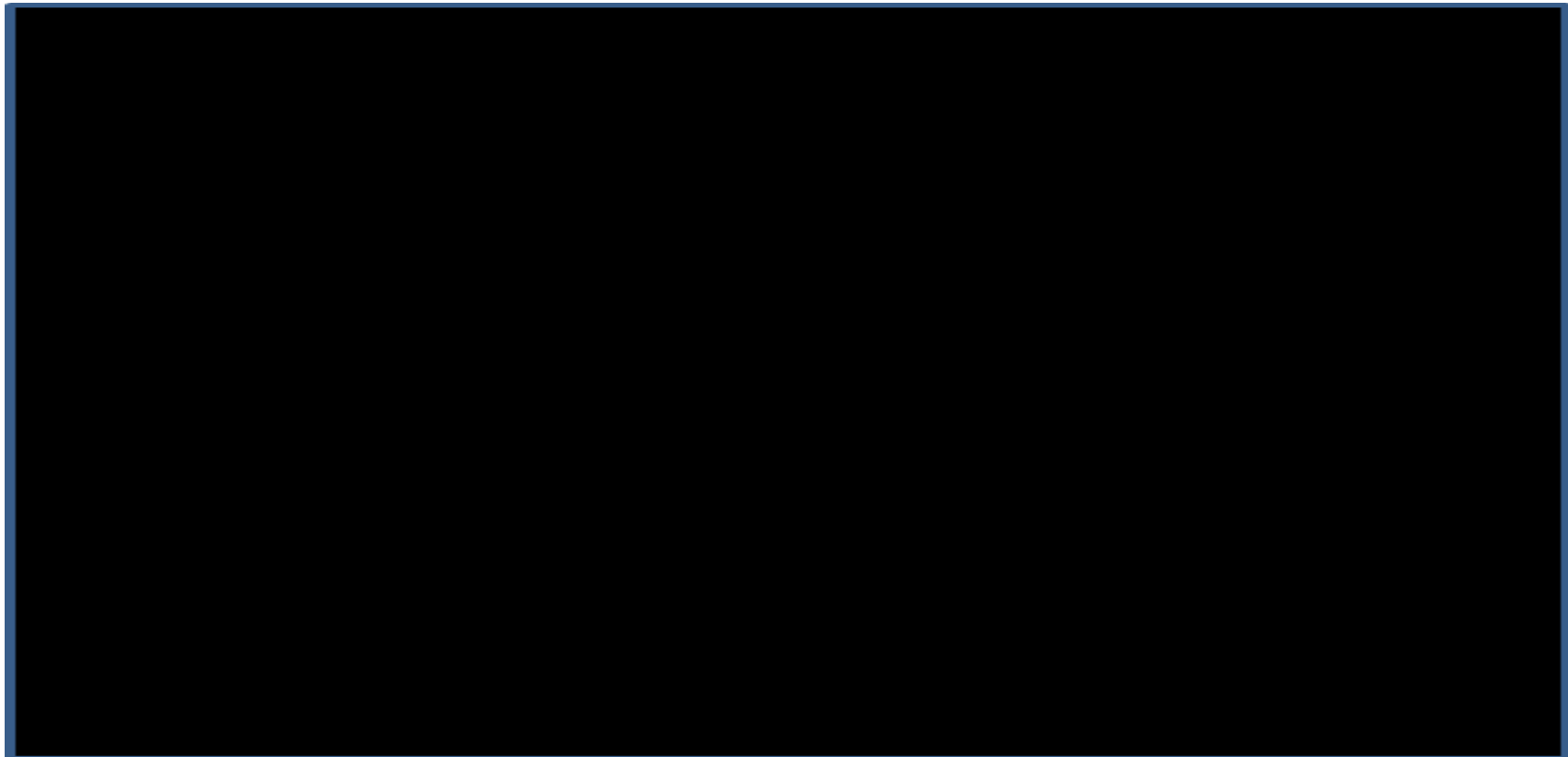
Conclusion	Limited data from HAL on which to base any historic judgement and analysis. Arcadis unable to comment further.

OBR analysis for Enjoy my time at airport

ARCADIS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Enjoy my time at the airport	80.5%	N/A	-	N/A	N/A	N/A
Arcadis Summary	Target provided by HAL along with limited data to fully analyse the target proposed by HAL.					

Perception of Enjoyment of Journey

Source: Departures and Arrivals QSM

Departures			
		Enter H7 attribute	
Key Drivers of Enjoyment	Reg. Coefficient	change	Impact
Ease	0.224	0.01	0.002
Prediction			4.02

Enjoyment - Departures	
2021	
% agreement	mean score
78%	4.02

Arrivals			
		Enter H7 attribute	
Key Drivers of Enjoyment	Reg. Coefficient	change	Impact
Ease	0.269	0.01	0.003
Cleanliness	0.094	0.05	0.005
Prediction			4.18

Enjoyment - Arrivals	
2021	
% agreement	mean score
84%	4.17

	H7 Target		2021 performance	
	% agreement	mean score	% agreement	mean score
Combined Enjoyment Measure	**80.5%**	**4.10**	**80.5%**	**4.10**

All scores are weighted
Coeff. are based on unweighted 2021 data
Every 0.01 increase in Mean Score is equilavent to a 0.5% in percentage agreement with statement

- This is a new target and as such data gathered by HAL is more limited than the other established measures that have been in place for several years.

- No target therefore currently exists but the above data would suggest that the HAL H7 target proposal is pragmatic albeit suggesting circa 1 in 5 passengers do not consider that they have sufficiently enjoyed their time at the airport or are simply neutral in their response, with the departures process scoring lower than arrivals.

- The % agreement scores as shown left for 2021 at 78% for departures and 84% for arrivals form the basis of the 80.5% target for H7.

Conclusion	Limited data from HAL on which to base any historic judgement and analysis. Arcadis unable to comment further.

OBR analysis for Feeling Safe & Secure

ARCADIS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Feeling safe and secure	95.5%	97.5%	-	HAL H7 – Y CAA IP - N	Y Range: 96%-97.5%	N
Arcadis Summary	Rational to believe that passengers would feel less safe and secure during the pandemic due to covid-19 and risk of infection. The CAA have included a Covid-19 Opex overlay for cleaning for the duration of 2022 to enable HAL to deliver enhanced cleaning measures. HAL initially proposed a target of 97.5% and have since reduced this to 95.5%. There was a steady improvement in scores from 2017 to the highest score in 2019 at over 97.5%. Only departures data was available to cover the period analysed in full.					

Feeling Safe & Secure Departures Weighted MAA data Jun 2015 to Feb 2020
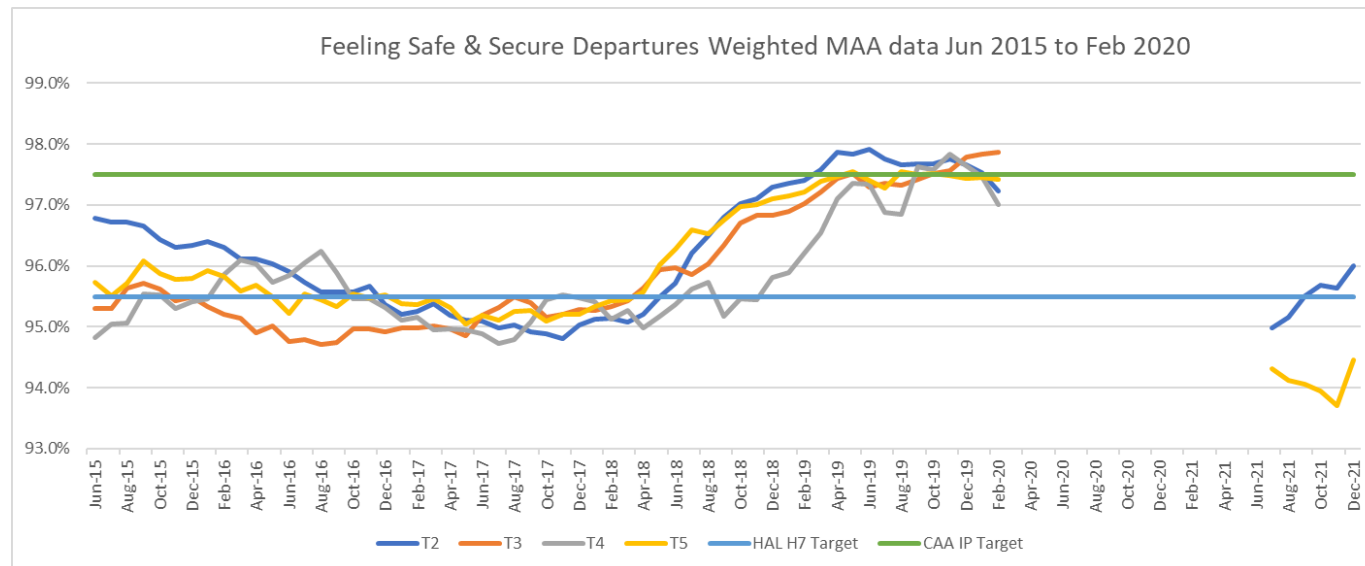
- HAL H7 proposal is for a target of 95.5%. The CAA IP proposed 97.5%.

- As can be seen, HALs performance has fluctuated around the 94% to 97% level throughout much of Q6 and has been quite variable and notably inconsistent.

- 2019 was a standout year based on the data shown left. It was the culmination of 2 years of steady but fluctuating growth in scores from Q2 2017 to Q3 2019.

- Data used is prior from June 2015 to February 2020.

Source: HAL data, Arcadis analysis - Data during the period of the pandemic is impacted by terminals being closed. Where less than 12 months data is available in any given month for the MAA calculation, then those scores are not shown.

| Conclusion	HAL revised target considered achievable, however also considered too low based on historic and recent performance notably in the period 2017-2019 pre pandemic. HAL original target and CAA IP target now considered potentially unachievable. Arcadis consider performance of 96%-97.5% achievable for H7.

OBR analysis for Ease of Access to airport

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Ease of access to airport	4.44	N/A	-	N/A	N/A	N/A
Arcadis Summary	Historic data from 2017 demonstrates a score of 4.36. There have been year on year increases in scores for this measure up to 4.41 in 2021. With the introduction of Crossrail in 2022/23, and increased bus and coach network in 2023/24, the target proposed by HAL would appear achievable. The introduction of the drop off charge is a possible risk to customer satisfaction but is not uncommon now at airports. HAL has more limited control over passengers decisions around access to airport which should be considered when deciding on this target. Insufficient data on which to decide if outperformance is possible.					

Ease of getting to the airport
Over-time trend, mean score
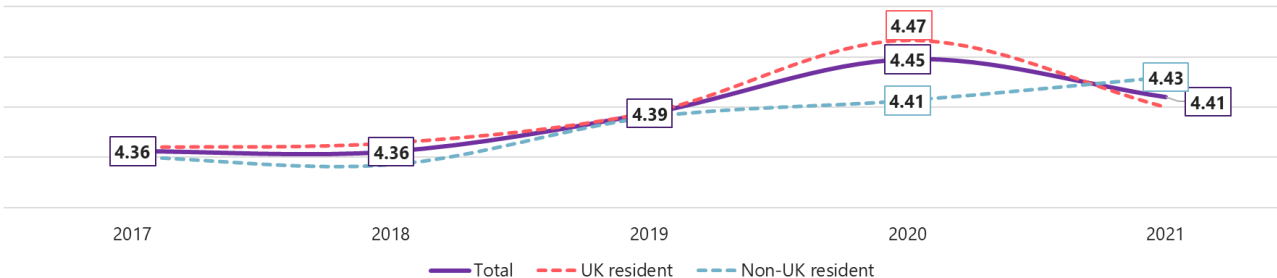
- This is a new target and as such data gathered by HAL is more limited than the other established measures that have been in place for several years.

- No target therefore currently exists but the above data would suggest that the HAL H7 target proposal is pragmatic.

Conclusion	Limited data from HAL on which to base any detailed historic judgement and analysis. Arcadis unable to comment further.

OBR analysis for Helpfulness of airport staff ARCADIS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Helpfulness of airport staff	4.36	N/A		N/A	N/A	N/A
Arcadis Summary	2019 actual score was 4.35 based on data shared by HAL. 4.36 therefore represents a very marginal improvement. Historic data suggests this target is achievable.					

Airport Staff Helpfulness
Departures QSM and Arrivals QSM

	2012	2013	2014	2015	2016	2017	2018	2019		2026
Airport Staff Helpfulness	4.26	4.26	4.25	4.29	4.33	4.32	4.33	4.35		4.36

Roll out of Service Signatures across Heathrow directly employed Frontline Colleagues

- This is a new target and as such data gathered by HAL is more limited than the other established measures that have been in place for several years.

- No target therefore currently exists but the above data would suggest that the HAL H7 target proposal at 4.36 for H7 is pragmatic.

Conclusion	The HAL H7 target of 4.36 is considered pragmatic based on the limited data shared by HAL. Due to limited data from HAL, Arcadis is unable to comment further in particular with regards scope for outperformance.

OBR analysis for Departure Flight Punctuality

**ARCADIS**

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Departure Flight punctuality %	80.5%	80.5%	£188m of Capex for Carbon & Sustainability programme	Y	N	N
Arcadis Summary	Within the £188m for Carbon and Sustainability allowed for the Final Proposals, there is 38m for Airspace modernisation and £20m for Air Traffic Management.					

Conclusion	Pre pandemic performance suggests the IP target is achievable. The investment currently proposed in the mid case for example airspace modernisation may well not generate improvements soon enough to see any benefits in H7 so should not be factored into any consideration around outperformance.

OBR analysis for Timely Delivery of Baggage

ARCADIS

Target area Measure	HAL H7 Target	CAA IP Target Proposed	CAA current mid case - Expenditure (Opex and Capex) £M	Is this target achievable based on CAA mid case expenditure allowances (Y/N)	Is there scope to outperform these within the mid case allowances (Y/N)	Is there a risk of service degradation (Y/N)
Timely delivery of baggage	N/A	N/A	£432m of capex allowed for in the CAA FP	N/A	N/A	N/A
Arcadis Summary	Historic monthly performance indicates some marked disparities between the terminals with T2 being the most inconsistent and regularly scoring the lowest of the 4 operational terminals. On average prior to the pandemic, based on limited data shared by HAL from January 2018, the airport was scoring in the region of 98% to 99.0%. The full capital allowance of £432m for the Baggage Programme as requested by HAL is allowed for in the CAA Final Proposals enabling HAL to address ageing assets such as the Early Bag Store in T1.					

Timely Delivery of Baggage monthly scores Jan 2018 to Mar 2022
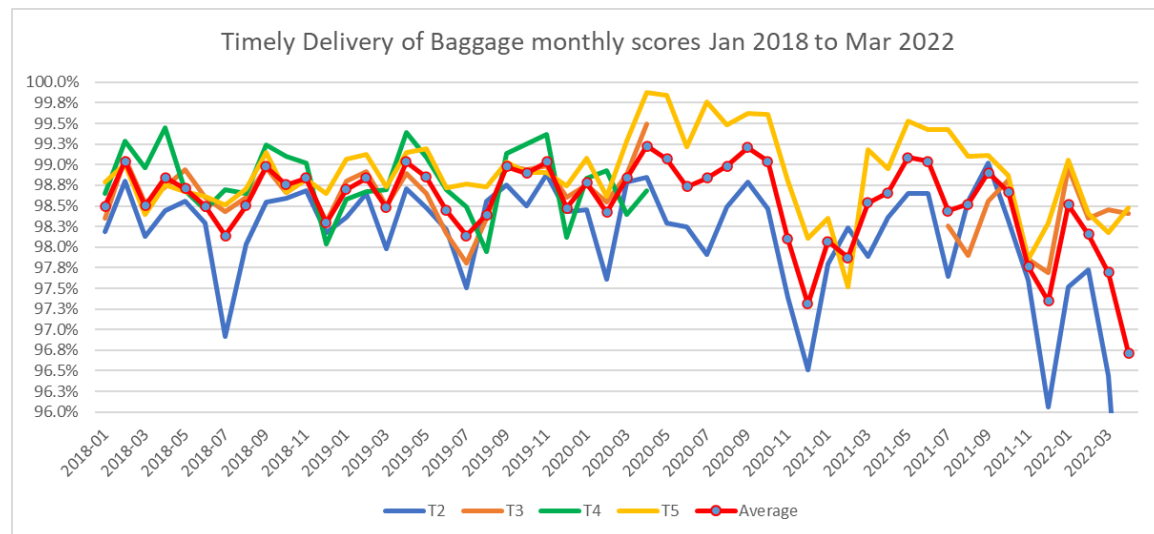
- The data has only been collected since January 2018 and as such gives a somewhat limited view of the long-term performance on this measure.
- The data as shared by HAL demonstrates the monthly performance by terminal for a 30-minute timely delivery of baggage measure. This means the percentage of bags delivered by the baggage system to the handler within 30 minutes of the scheduled time of departure (STD) of their intended flight.
- T2 has frequently been the lowest scoring terminal and arguably the most inconsistent in terms of scores but not by a material amount overall. T5 has achieved the highest scores through Q2 and Q3 in 2020 at around 99.3% to 99.9%. Prior to the pandemic impact, the average across all terminals fluctuated between 98% to 99.0%.

Conclusion	Prior to the pandemic, the airport average score was consistently above 98%. At 98%, T5 would have consistently achieved the target with T3 and T4 having isolated failures in Q3 2019. T2 would have failed more frequently against a target of 98% from January 2018 to December 2019, on some isolated albeit slightly more frequent instances compared to the other terminals.

Conclusion

- Arcadis has provided an overview by each of the targets considered by the CAA in its Final Proposals, expanding on the scope of the November 2021 report.

- The analysis is based on data shared by HAL, engagement with both the airport and airline community and reference to the H7 Capital Investment review also conducted by Arcadis.

- Arcadis has also collaborated with other CAA advisors to help form a view on each target considering both the operating expenditure allowed for in the CAA FP as well as the individual targets basis of measurement.

- The approach to analysing the data on a monthly basis rather than annual averages, has sought to directly address the challenge to Arcadis's approach in the IP report in November 2021 as put forward by HAL.

- Arcadis believe this approach and methodology gives a clearer representation of actual performance and therefore provides a more robust basis on which to consider targets for the new control period in H7 when also linked to investment and operating environment.

End