

| SMS Best Practice Submission | | | |
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| ANSP | Airways NZ | Date of Submission | 23 June 2025 |
| Contact Details | | | |
| SoE Study Area | 8.1 Safety reporting, investigations and improvement | | |
| OP/GP title | Safety Performance Indicators (SPI) | | |
| In use since | June 2021 with continuous improvements | | |
| ANSPs using this practice | Airways NZ | | |

SMS process - description and justification

Airways NZ is submitting the SMS Safety Performance Indicators (SPI) process for consideration of best practice.

Airways SPI have been structured to strengthen our traditional safety performance monitoring methodology of measuring what has not gone right (Safety-I) and delivers an additional suite of leading safety performance indicator metrics that also measure what is going well (Safety-II). This will enable the Airways' frontline staff, people leaders, Executive and Board to see the future and apply early intervention that enables effective recovery from organisational and operational drift, well before a significant safety event occurs.

SPI project - resourcing and scope

This project is a major change that has required significant individual effort by the Project Lead and organisational courage from the Board and Executive Management. For our people, it has expanded safety thinking from what had been a well-established and understood traditional methodology.

External SME contractor support continues to be engaged to design the dashboard structure, understand the background calculations and develop interactive dashboards and data drills that are capable of displaying the same data targeted at diverse levels of the business.

The SPI were initially derived over a 12-month process, which included:

- reviewing extant KPI,
- researching SPI from other ANSPs and industry,
- seeking input from Airways Teams across the business,
- identifying the data points that will be enablers for our Managers, Team Leaders and people to improve business resilience,
- developing a balanced scorecard methodology that weights each indicator against the broader safety objectives, designing, and
- delivering a data collection system to aggregate the data and create new dashboards to provide real time SPI data to our people at all levels of the business.

SPI project - costs and funding

The value that this project would deliver was clearly identified and articulated to the Executive and Board by the Project Manager. It would also have not been possible without the enduring and unwavering support provided by the General Manager of Safety and Assurance. These attributes were the key enablers that ensured funding approval was gained for the use of internal and external resources to support the concept development, design the data warehouse structure and create the SPI dashboards.

Notably, although the business was significantly constrained operationally and financially by the COVID pandemic, and many other projects across the business had been deferred or curtailed, the Executive and Board fully supported initiation and delivery of the SPI project. At a time of constrained resources and funding, this decision demonstrated considerable trust and confidence in the Safety and Assurance team, recognised the high value placed on safety projects and supported our continuous improvement methodology for achieving excellence in safety outcomes.

Why were SPI developed?

The change from KPI to SPI originated from a routine review. However, it quickly became apparent during the literature review work (within the scoping phase) that there was an opportunity for Airways to significantly improve its monitoring of safety metrics, data mine actionable information, deliver a more informative data set to our people and enable effective safety decision making.

The backbone of the SPI is the Airways Operational Barrier Model. This delivers data on Threat & Errors, Barriers & Controls, and Human Performance. Additional to this the SPI are multifactored and balanced to enable monitoring of Actions and Risks, alongside Occupational Health and Safety (OHS) and Security requirements, as part of our integrated SMS.

Safety outcomes

All of the business has benefited from the SPI project. It has moved Airways from traditional safety management thinking into proactive safety. We now maintain a weather eye on the past while also ensuring that our main efforts and focus are firmly on doing the key things that will ensure our future safety and business success.

The SPI dashboards enable an all of Company, interconnected perspective for operational safety, security and health and safety, company-wide that is drillable down to individual Business Units and Individual Units and Teams within those Business Units. With this toolset, our managers and people have the ability to direct their safety performance monitoring and efforts into the areas where the greatest benefits will be achieved.

The SPI dashboards are now integrated in the Monthly Company Safety reports and quarterly board Safety reports that give a snapshot in time, additional to the real-time dashboards available to everyone in the company. The conversations are now about ensuring the weighted measures are driving the right behaviours and conversations to ensure the resources and responses are tailored and proportionate.

2023 SPI review and improvement

The 2023 SPI review evidenced that implementation of the SPI had provided clear direction, and that the measures were driving the required behaviours within Airways. The resulting changes had also delivered targeted safety improvements across the organisation which have had a positive impact on Airways safety performance. The SPIs were also being reviewed and discussed both at the monthly Executive meeting and the relevant Board meetings (monthly and quarterly).

Examples of recent improvement initiatives are:

- Event Management/Overdue Actions
 - increased spotlight on event and action management
- Risk Reviews
 - more discipline with oversight
- Technology Group (TG)
 - introduction of a Safety II focus
 - improved awareness for TG leadership on Safety II and what effective leadership is.

Recognising that the SPI should not be static and require continuous monitoring and revision to remain effective and relevant Airways commenced a review. This review ensured that stakeholder input, critical to ensure the SPIs are fit for purpose, continue to drive the right behaviours and accurately measure performance was gained. The review formed part of our biennial periodic review to sense check that the SPIs are meaningful and continue to support effective integrated safety decision making across the business. Changes requested by stakeholders were then considered, reviewed to ensure any unintended consequences were assessed, managed and aligned to the objectives the SPI programme.

During 2023 the SPIs were also presented to the Safety team of one of our aerodrome customers to help this customer look at how they could integrate their SMS and relevant safety data. The SPI programme was also presented at the 2023 National Airways Safety Forum, where participants from across the system spent the day talking about all things safety related to aviation.

2024 SPI review and improvement

The SPI programme provides for a full review of the SPI and the dashboards biennially. This is to ensure that the SPI remain fit for purpose and continue to support effective safety decision making across the business.

In depth stakeholder consultation was undertaken covering every business unit within Airways. This in-depth review confirmed the finding from the 2023 initial review that the SPI had had, and continued to make, a positive impact on the safety performance of Airways. It also identified opportunities for further improvement which were delivered in March 2024, these included:

- Separation of the Corporate function into individual Business Units. This change has enabled accountable and responsible managers to have greater clarity over the safety performance of their business units and the teams within each business unit.
- Separation of aggregated SPI for SMS and HSW objectives and assignment of these SPI to individual business units. This change has delivered greater clarity over the safety performance of individual business units to the accountable and responsible managers.
- Updating of SMS internal training requirements related to Security and Health, Safety & Wellbeing elements. This change has removed ambiguity and provides actionable information to the accountable and responsible managers.
- Expanding the Action Management SPI. This change has delivered enhanced data, context and greater detail on safety performance.

Example data displaying the structure of the SPI dashboards.

Figure 1 below depicts the initial design of the main SPI dashboard that was used for Board/Exec monitoring from commencement of the SPI Programme until March 2024. In this display all Corporate functions were aggregated under a single Corporate group. SMS and HSW aggregated SPI were also displayed to provide a 'system view' of SMS and HSW performance, but the individual elements were not displayed in Business Unit SPI.

Figure 1. Initial design of the main dashboard for Management/ELT/Board monitoring.

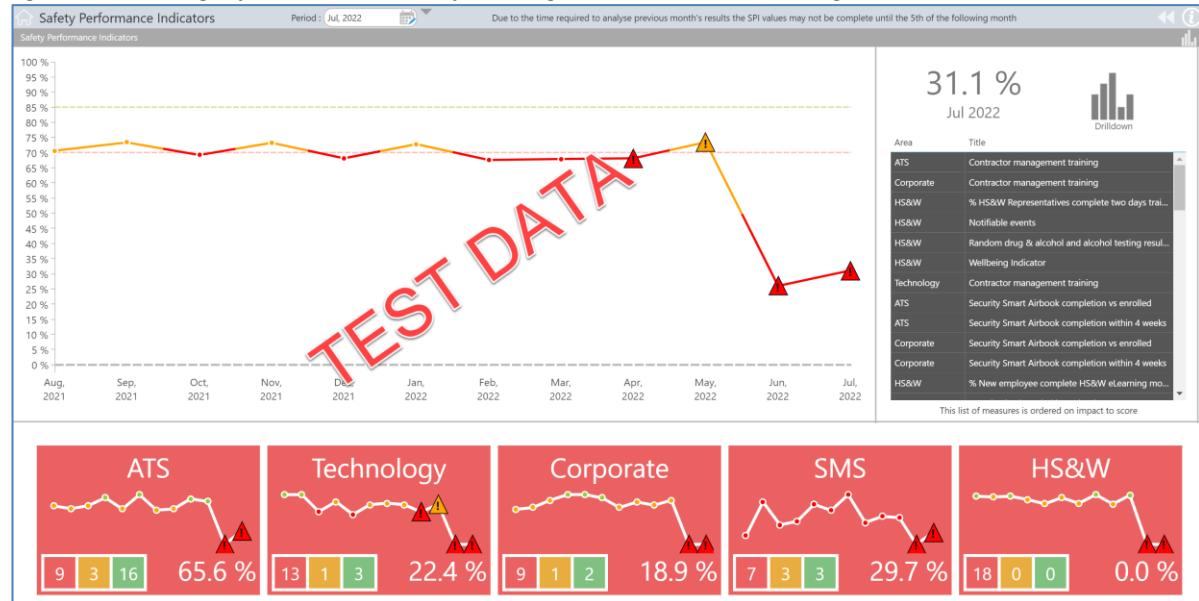


Figure 2 below depicts the changes made during 2024 to delineate corporate functions into individual SPI and include HSW and SMS elements into individual Business Unit SPI. Importantly, this change also retained the earlier 'system view' to enable monitoring of SMS and HSW performance at all of 'system' level.

Figure 2. Version 2 (Apr 2024) design of the main dashboard for Management/ELT/Board monitoring.

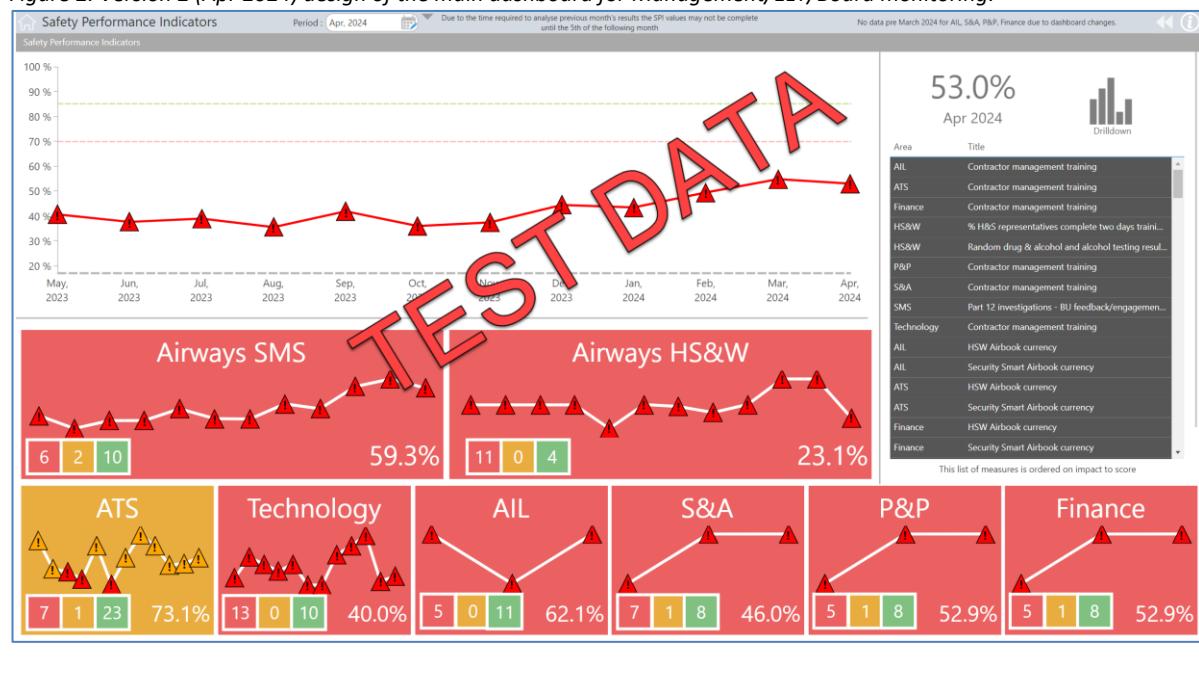


Figure 3 below depicts the initial design of the ATS individual dashboard that was used for Board/Exec monitoring from commencement of the SPI Programme until March 2024. This includes all of the measures that were applicable for this time period.

Figure 3. Initial design of ATS department specific dashboard.

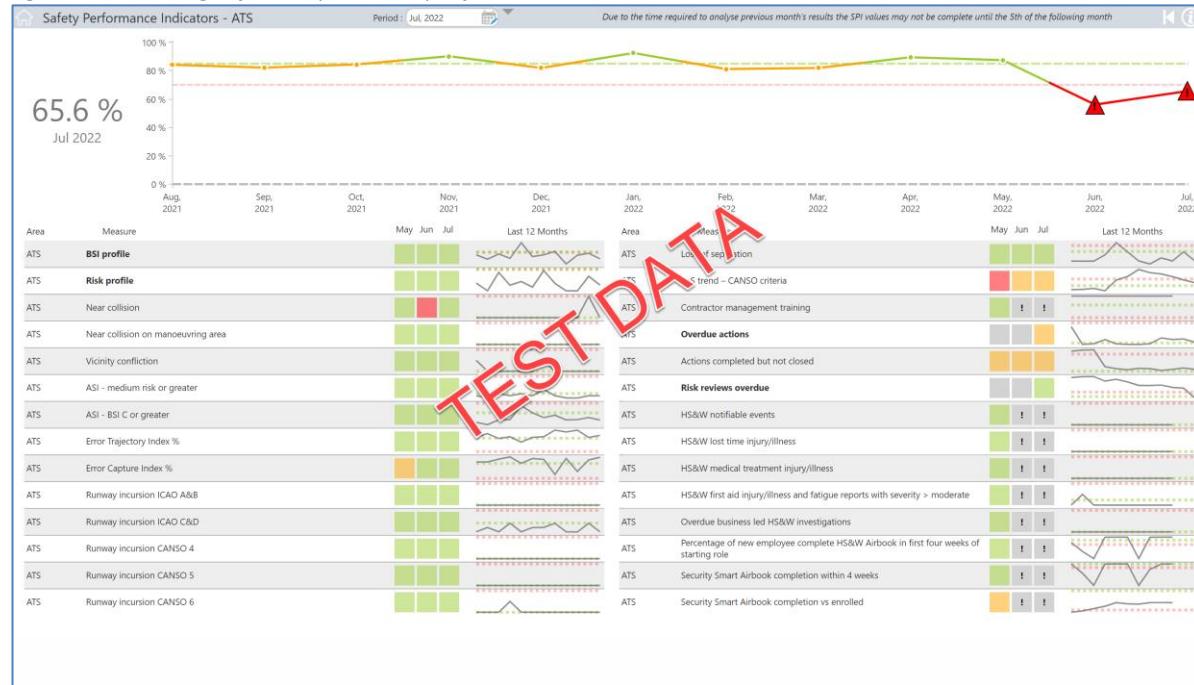
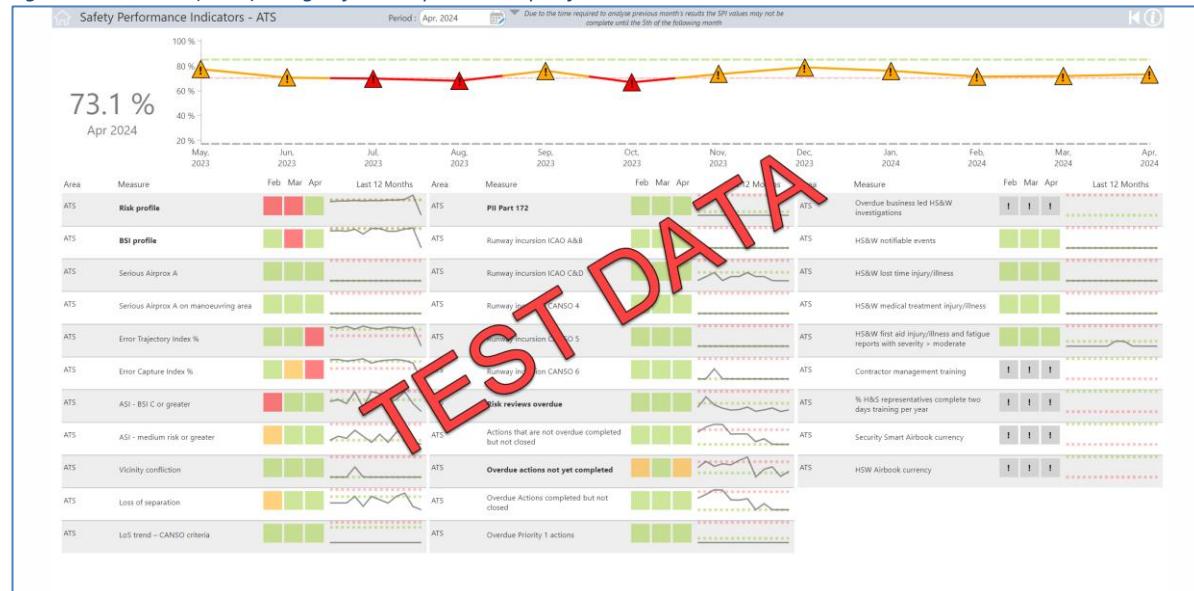


Figure 4 below depicts the updated design of the ATS individual dashboard that is now used for Board/Exec monitoring from March 2024. This includes the updated measures that give more granular detail on the performance of individual business units for the accountable managers to monitor performance.

Figure 4. Version 2 (2024) design of ATS department specific dashboard.



The SPI Procedure, an SMS Controlled document, provides a detailed description of the SPI methodology and dashboards.

2025 dashboard improvement and SPI sharing

In the past year Airways has moved the underlying dashboard software from Dundas Bi to Power Bi. By making this change the dashboards now provide data in a clearer and well known format. It has also allowed for further drill down of data behind the SPI, as well as a better UI allowing easier movement through out the dashboards.

Additionally Airways conducted a review of the SPI and the thresholds of some measures were updated to ensure continued focus and improvement in target areas such as Actions and Risk Management.

Airways also engaged with other ANSP (NavCanada and AustroControl) during the CANSO Global Safety Conference where the SPI were presented to the conference. Airways has shared the detailed structure, design and logic of the SPI programme. In doing so Airways is supporting the improvement of the global ANSP community in the true spirit of CANSO. Airways has also separately engaged with DGA Oman CAA sharing the SPI to support their intentions of improving SMS governance, monitoring and outcomes.

Both the move to Power BI and the sharing of the SPI in supporting other ANSP have had the positive impact of further focus within Airways, engaging across all levels and resulting in upcoming improvements.

Figure 5 below depicts the updated design of the ATS individual dashboard showing the improved UI and data available.

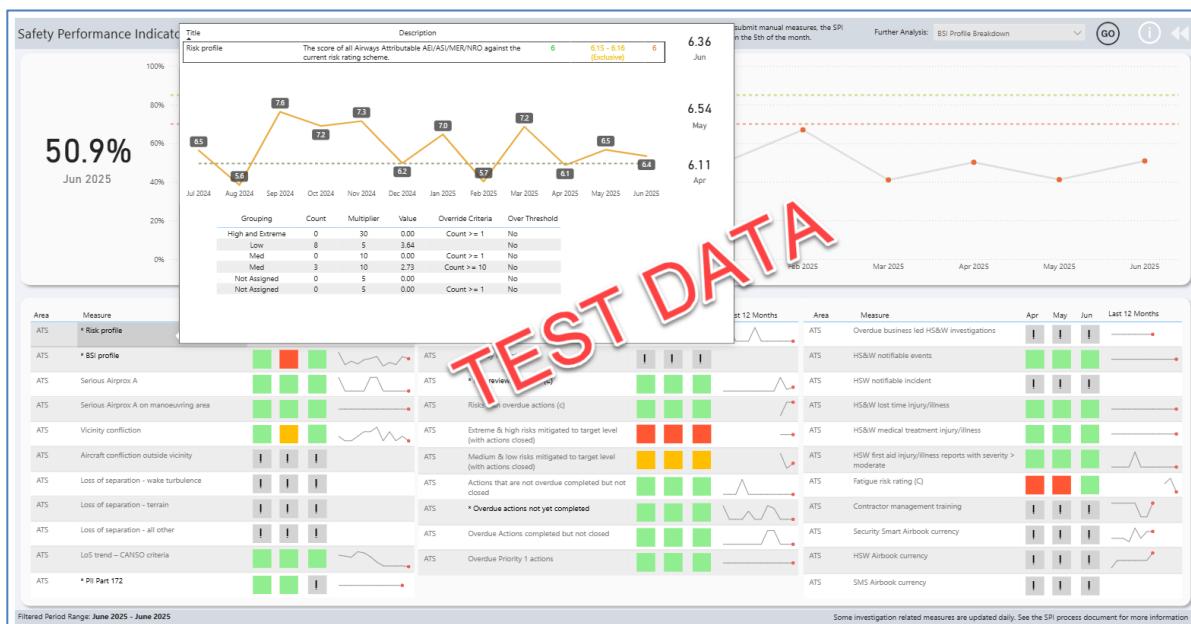


Figure 5: Power BI UI

The SPI programme is living dynamic system. It continues to take cognisance of business requirements as "what we do", "how we do it" and the tempo of change fluctuates. This is evidenced by the scheduling of two tranches of SPI improvements between 1 Jul 2025 and 30 Dec 2025.

By submitting this document, your organisation is willing for the proposed Best Practice to be shared with other ANSPs.

