SAFETY MANAGEMENT Q&A

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1. What is the most safety-significant change facing your organisation at the moment?

We are concluding the last phases of a new ATM system project – a project that took more than five years to conclude. The new ATM system has been in operation for almost two years. The final milestone is a standby backup system and a fallback system to assure continuation of service. The old ATM system served as a backup in case of a catastrophic system failure until the new contingency setup was installed. This is now decommissioned. This project presented big safety challenges because we performed the change without an additional full capability operations room. We had to deliver ATC services from a makeshift temporary operations room while the old system was dismantled and the new system installed. Naturally, this work had to be done without lowering the current safety levels of MATS ATCC operations.

2. Why is this change necessary? What is the opportunity or need?

The old system was rapidly approaching its end of life. Hardware was almost obsolete, and support from the manufacturer was barely available. From operational, efficiency and safety points of view, we were running out of options. The old system was also not able to handle the ICAO Fight Plan 2012, requiring a new flight data processing system. Short term conflict alert, area proximity warning (APW) and minimum safe altitude warning were already available in the old system, but we now also needed the approach path monitor (APM) safety net.

We also introduced the medium term conflict detection (MTCD) as a new ATCO tool. The intention of introducing the MTCD is to assist the ATCO in providing a more predictive ATC service. This would improve the tactical aspect of planning and provide early conflict detection with a lookahead time of 20 minutes, thus enhancing efficiency and at the same time reducing sector workload. For the new safety nets and the MTCD, we were supported by experts from EUROCONTROL. This was a necessary change and an opportunity to introduce new tools, including moving completely to a stripless system.

3. Briefly, how is safety assured for the change?

This was one of the biggest headaches of the project and assuring safety of this big project was the responsibility of the MATS Safety Section in collaboration with the Operational and Technical sections. One of the most important decisions taken at the safety planning stage related to a clause in the contract with the winning bidder for the ATM system. This required the manufacturer to provide the architecture safety case (hardware and software), in addition to all the standard regulatory requirements. ANSPs, especially small ones, lack the resources to do such complicated safety analysis from an engineering point of view.

The MATS safety process was extensive. It was initiated by a mind map covering the scope of the implementation, followed by an exercise supported by EUROCONTROL, to identify the most critical areas, complemented by a detailed safety plan. The six-year road map included more than 45 safety assessment meetings, process review meetings, surveys, audits, inspections, checklists and post mortems on the activities conducted, covering all elements of the system. We deployed working groups composed of experienced ATCOs and ATSEPs for all areas of the system. We started with the worst-case scenarios for the initial assessments to abide by regulatory requirements. We then tried to ensure the system was well protected before presenting the change for the safety assessment. We also conducted audits at the manufacturer against ISO 9000 requirements to ensure that what was promised was being delivered.

4. What are the main obstacles facing this change?

The main obstacle that we experienced was the control and management of contractors, especially where software updates and bug-fixing was involved. We controlled this activity with a set of procedures agreed and supported by the manufacturer. The other big obstacle was the new HMI incorporating new tools like MTCD and safety nets, e.g., APW. We expected some resistance due to the big technological change from users with different backgrounds and diverse age groups, even though working groups were involved all the way. The final obstacle was training on the high-fidelity simulator because issues cropped up when we moved to live traffic. Simulations are necessary and help a lot, but once you go live, what was good for the simulations sometimes presented difficulties with live traffic.

5. What is the role of front-line practitioners? How is their expertise incorporated into change management?

Involve those who tackle daily situations that crop up from an operational and engineering perspective; the people who work 24/7 with the system. Add to that safety specialists and good moderators/facilitators, and safety will be served with excellence. If the safety processes are done without appropriate frontline involvement, you end up with a paper exercise, maybe weak in important realities of the service delivery.

6. What do they think about the change?

This was the first experience of a change management process of such a magnitude and of such complexity. Our experience was limited to smaller projects, but thanks to all sections of the organisation, we made it work. Without leaving out anyone, I have to say that the whole safety process was conducted internally and supported by all sections. It was a big achievement because the entire team from all levels worked together diligently.

7. How can front-line practitioners get involved in safety management to best support operational safety?

We use front-line practitioners on a part-time basis in all safety management areas. They perform the roles of investigators, risk assessors, auditors, surveyors and other safety-related activities as necessary. They are all trained in their SMS roles in line with the safety section training and competence requirements. To sum it up, the engine of our safety management system is the practical set up, its documentation and the support from all levels of the organisation. Its lubrication comes from the front-line practitioners, who work for the safety of our organisation. The MATS SMS setup is based on the principle that things work best if they are kept simple rather than complex. For us at least, this setup is delivering.