

July 2008



WELCOME

This is the third issue of NETALERT, the news update for people working in airlines, air traffic control centres, and the organisations that support them.

Since our last newsletter a number of positive things have happened: the SPIN Task Force has reformed as a Sub Group, the main impact of this is that it has a more solid status for the future; we have hosted our second Safety Nets workshop which we report on in this issue; and we have received news of promising results from improvement initiatives undertaken by a number of ANSPs.

It has always been our intention to spread the experience of others. So with this issue you will find an extra insert on STCA harmonisation that was published in Issue 18 of skyguide's 'safety bulletin'. If you'd like to find out more about skyguide's safety activities, their 'safety bulletin' publications can be downloaded at http://www.skyguide.ch/en/Dossiers/Dossier_Safety/Safetymanagement_at_skyguide/

Please contact us if you have experience to share too! Our details are on the back page.

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On 27th May 2008, EUROCONTROL held its second Safety Nets workshop. Supported by representatives from 30 ANSPs, industry and the R&D community, the workshop offered the opportunity for stakeholders to discuss the past, present and future of Safety Nets. The event confirmed that STCA and ACAS remain priorities for action, and the audience heard about a number of new initiatives to address this. Training also hit the spotlight, when SMATSA described the steps they have taken in Serbia and Montenegro to improve the understanding of Safety Nets.

"We are not working in isolation but working in the field – talking to controllers and looking at real-life situations."

Martin Griffin, ATC Domain Manager, EUROCONTROL

Progress report on STCA
Released in November 2007, the EUROCONTROL STCA Specification has a supporting pan-European ECIP objective meaning STCA implementation needs to be achieved by the end of 2008. EUROCONTROL reported that a good percentage of states were 'on-time' with the implementation, but there was still room for improvement.

One of the rationales for developing the specification was the need to optimise the performance of STCA. skyguide have implemented a TestBed to tune their STCA.

Using actual data, the TestBed creates approximately 800,000 encounters which are classified into four categories ranging from 'clear risk of conflict' to 'nuisance alert'. Working closely with operational staff, the TestBed is used to ensure the current STCA is identifying encounters that should raise an alert. It has also been used to tune skyguide's new STCA system.

*"Don't trust scenarios.
Trust live traffic"*

Jean-Philippe Shepherd, skyguide TestBed engineer

Training on the ground

At a practical level, SMATSA are addressing the need to clearly differentiate between controller tools and Safety Nets by including specific modules on ground based Safety Nets in ab-initio, rating and continuation training. To build controllers' acceptance and trust of ground based Safety Nets, the SMATSA training also includes an 'equipment module' which gives controllers an appreciation of the workings of ground based Safety Nets. ↗



NET ALERT

It's time for action

Action replay

continued



Also on the theme of training, displayed at the workshop was the first module of an awareness and training package that explains what Safety Nets are, why they are important and how they work. The tool has been developed to fill an information gap that could be useful to working ATCOs, pilots and other aviation professionals. We'll keep you updated in future editions of NETALERT.

RA downlink getting closer?

While controllers understand STCA, and pilots understand ACAS, in general there is little shared understanding of each other's systems. So in many instances pilots are unaware that STCA does not have the same degree of standardisation as ACAS. While no long-term solution is yet available, the measurement and understanding of the issues has taken a good step forward. EUROCONTROL is addressing this through the PASS project (*see opposite page*) while other states are also undertaking monitoring activities. For example, DFS has an ACAS monitor installed in the Langen ACC which can be *"A thorough understanding of the interactions between STCA and ACAS is still required."*

Andrea Muggli, Civil Aviation Safety Officer, DTEC, Switzerland

combined with radar data to show vertical and horizontal separations for Resolution Advisory (RA) events. The system has shown that, on average, there is about 1 RA per day over northern Germany and 1.5 to 3 a day in the Frankfurt area. DFS plan to develop the system further from looking at specific events towards a more general view covering all the "systems" involved. Although the debate continues as to whether RAs should be downlinked and displayed to the controller, such monitoring activities bring the decision a step closer.

Looking to the future

SPIN, the Safety-nets Performance Improvement Network, is developing specifications for Minimum Safe Altitude Warning (MSAW), Approach Path Monitor (APM) and Area Proximity Warning (APW). While not mature at the present time, it was acknowledged that these Safety Nets will be on the table at a future workshop and there was strong support for similar standardisation activities as have taken place for STCA.

Speakers provided views on the future of

ACAS and challenged the workshop on the future direction of Safety Nets. Opinions were voiced as to how the expectations for Safety Nets laid down by SESAR could be addressed. Delegates also learned that US standards body RTCA has established Special Committee 218 to report on the future relationship between TCAS and ADS-B in 2020-2025. Europe is represented on the committee by EUROCAE Working Group 75 and EUROCONTROL.

Ready for action

Workshop co-Chair Martin Griffin summarised his view of the workshop: "*We are generating interest and clearly moving in the right direction. The STCA Specification is a success and we now need to push forward with MSAW. The very real challenge of ACAS-STCA interactions needs to ultimately be addressed through a concept for airborne and ground based Safety Nets. A common theme throughout the workshop was that SPIN is the only group in Europe to advance work in Safety Nets. SESAR provided confirmation that Safety Nets are an integral part of the ATM Master Plan and I'm confident that SPIN will have a role to play in SESAR.*"



Delegates had the opportunity to provide feedback on module 1 of the training package

The organisers wish to thank speakers and stakeholders who showed their commitment to the advancement of Safety Nets by attending the workshop. The presentations are now available for download on the Safety Nets website.
http://www.eurocontrol.int/safety-nets/public/news/080527_safety_nets_workshop_2.html

PASS Go!

Performance and safety aspects of STCA

Launched in October 2007, PASS aims to develop performance and safety requirements for STCA as well as deliver the foundations for a safe and efficient joint concept of operations for ACAS and STCA. In this article, PASS project manager Stanislaw Drozdowski explains the background to this three-year endeavour.

ECAC-wide standardisation of STCA is progressing through the STCA Specification. The next stage in the evolution of STCA is to develop quantified performance and safety requirements, which take into account how ACAS operates. These will enable us to make the first steps towards a consistent overall concept for airborne and ground based Safety Nets – although it's important to note this refers to an integrated concept of operations and not a technical integration.

We started by looking at whether experience from the ACAS field could be useful in establishing performance requirements for STCA. Although ACAS and STCA are both well established, ACAS is more mature in terms of defined standards through ICAO SARPS that give minimum performance requirements.

EUROCONTROL had previously developed encounter models allowing the environment in which ACAS operates in Europe to be replicated. In 2007, the I-AM-SAFE feasibility study demonstrated that STCA could indeed benefit from the encounter model-based methodology used for ACAS. The study further identified that such a methodology could also



PASS incorporates and builds on the work of preceding studies

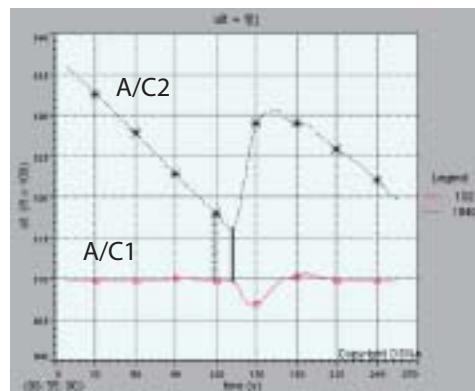
be applied to investigate the interaction issues between ACAS and STCA.

These outcomes have been recognised in the work programme for the PASS project. Phase 1 is focusing on developing an understanding of the current operational situation in Europe and on defining a typical series of events in STCA and ACAS occurrences. This will provide outputs to validate the models being developed in Phases 2 and 3. In Phase 1, DSNA and skyguide are supporting a large scale monitoring activity to collect STCA and ACAS occurrences for analysis, they will shortly be joined by DFS.

Phases 2 and 3 will develop performance and safety requirements for STCA using an encounter model-based methodology that will account for controller and pilot responses to STCA and ACAS occurrences, ATC surveillance

performance and altimetry error factors. Phase 3 will also provide the core elements for a consistent overall concept for STCA and ACAS operations - including operational requirements and recommended ATCO working practices to support safe and efficient STCA and ACAS joint operations.

PASS will make an important contribution to the development of Safety Nets; helping to improve STCA performance, providing a better understanding of STCA and ACAS occurrences, and delivering the first steps for an overall concept for airborne and ground based Safety Nets.



Vertical profiles during an STCA alert (cleared level taken into account). Subsequently, both aircraft respond to coordinated TCAS RAs. From PASS monitoring activity.

Acronym buster

ACAS: Airborne Collision Avoidance System

FARADS: Feasibility of ACAS RA Down-link Study

I-AM-SAFE: IAPA – ASARP Methodology for Safety net Assessment – Feasibility Evaluation

ICAO SARPS: ICAO Standards and Recommended Practices

PASS: Performance and safety Aspects of STCA, full Study

STCA: Short Term Conflict Alert



Together Everyone Achieves More!

A growing community effort



The SPIN Task Force met for the final time in Budapest in March. Pictured after that meeting are left to right, Front row: Rod Howell - QinetiQ, Luca Save - DeepBlue, Isa Alkalay - skyguide, Hans Wagemans - EUROCONTROL, Michel Quiquempoix - Belgian Air Force. Middle row: Alberto Pasquini - DeepBlue, Ben Bakker - EUROCONTROL, Alistair Sloan, NATS, Stan Drozdowski - EUROCONTROL, Yvonne Graner - DFS, Andreas Krebber - DFS. Back rows: Marina Mueller - COMSOFT, Jean Beijard - DSNA, Rui Azezo - NAV Portugal, Rui Guimaraes - NAV Portugal, Frederic Leblanc - Thalys, Claude Manguer - DNSA, Carlos Santos - NAV Portugal

The team that brings you NETALERT is small (just 3 of us), but of course we are part of a much larger team of people working on safety improvement matters in service providers, industry, airlines and regulators.

The SPIN Task Force, which has been a true community effort, has met 15 times since 2005. In that time 12 ANSP members and 6 industry members, along with their EUROCONTROL colleagues have worked not only on developing specifications for Safety Nets, but also hosted meetings at different control centres to keep in touch with operational reality and share case studies and experiences.

Today the Task Force has become a Sub Group to give it a more solid status for the future and provide much-needed continuity. SPIN, the Safety-nets Performance Improvement Network has also grown to include 19 ANSP active members or observers as well as 7 industry representatives.

The first meeting of the reformed SPIN took place 28-29 May in Brussels and was attended by 34 delegates, with welcome newcomers from 5 organisations. If you would like to find out more about the work of SPIN, join or become an observer, please do contact us. After all, together everyone achieves more!

In Brief

■ **APW case study completed.** The Safety Nets team recently completed a fresh case study with Belgian Military ATC into their Area Proximity Warning (APW) system. Says ATCC Semmerzake's Jürgen Hellmanns: "Building on the experience gained in the STCA case study this was a useful way to establish our requirements for improving the APW function in our system." For further information on the case study findings please contact one of the Safety Nets team.

■ **Improvements follow STCA upgrade.** DFS's Karlsruhe UAC has seen a significant reduction in the number of incidents after upgrading their STCA system in line with the EUROCONTROL Specification. Similar reports have been received from other centres.

■ **Interested in safety?** Visit the www.skybrary.aero website which contains safety knowledge contributed by EUROCONTROL, ICAO and the Flight Safety Foundation. It is a useful and easy-to-search resource with thousands of articles and data items linked to aviation safety, including a section on loss of separation and Safety Nets and also a handy ICAO article search facility.

■ **FLY films.** The EUROCONTROL website now features a number of short films called the 'FLY series' in association with Euro News. In series no.4 a controller from Maastricht UAC demonstrates the STCA system in action. Take a look at: http://www.eurocontrol.int/corporate/public/standard_page/press_fly_series_4.html

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