European Global Navigation Satellite Systems Agency

HORIZON 2020

General aviation **R**escue capacity **IM**provement for the worldwide **A**doption of a **S**afe **S**olution based on **E**uropean GNSS

General aviation user's needs collection workshop

6 – SAR Communications

Barcelona
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ThalesAlenia Space a Thales / Leonardo company

ECA GROUP ELTA

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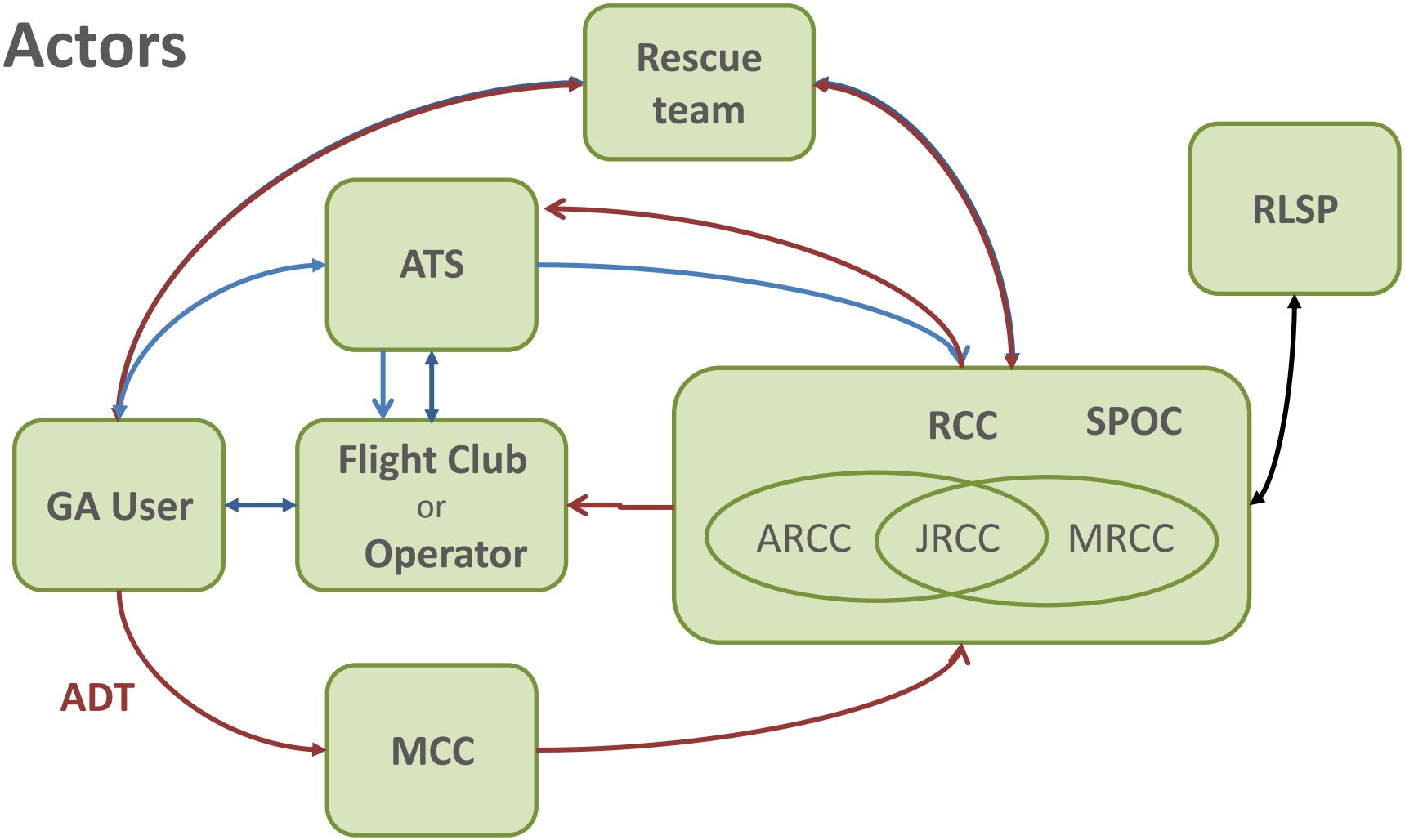
1 – SAR Comm. in GA

Actors



Communications

- The communications networks currently in place between aircraft operators and the ATS are based on the Aeronautical Fixed Telecommunications Network (**AFTN**).
- Flight plans are disseminated over this network; subsequent movement messages (flight plan changes, departure and arrival reports) and SAR alerting messages as well.
- Extended information between actors may be performed through voice communications, fax, e-mail, etc.

2 – Improvements in features/operations

Challenges in current operating environment

- Current GADSS ConOps document lists a number of areas where improvements could be made
- They are grouped under 4 headings:
  - **Aircraft systems**
  - **Air Traffic Services**
  - **SAR system**
  - **Information Management**

2 – Improvements in features/operations

Challenges on information management

1. Improve the identification of the responsible RCC for the region of the aircraft accident
   - There is no worldwide chart(s) publication of Aeronautical Search and Rescue Regions which allows stakeholders to quickly identify the relevant RCC(s) to contact.
   - There is no automated system support in correlating the aircrafts position with the RCC area of responsibility
2. Improve availability to reach operational staff of ATS centers and RCC's
   - Missing a consolidated worldwide contact list
   - Missing an automated system support to provide contact details of operational staff
3. Improve availability to reach aircraft operators

Challenges on information management

4. Improve ground communications capabilities
   - AFTN is quite limited in its capabilities, especially in terms of interactivity and the exchange of large quantities of data.
5. Enhance provisions for effective use of English language by points of contact (ATS unit, RCC, Aircraft operator)

2 – Improvements in features/operations

What we are looking for?

Quick information sharing between SAR actors
Access to all information from a single system
Standard formats to encapsulate the exchange of information
Automatic updates when new information is available

Reduced response times

Better situation awareness

Reduced workload

Easiest coordination

Solution proposed in GRIMASSE

Development of a **SWIM** based **SAR Information Management System** that is expected to provide information to the RCC as soon as a distress situation is detected by C/S.

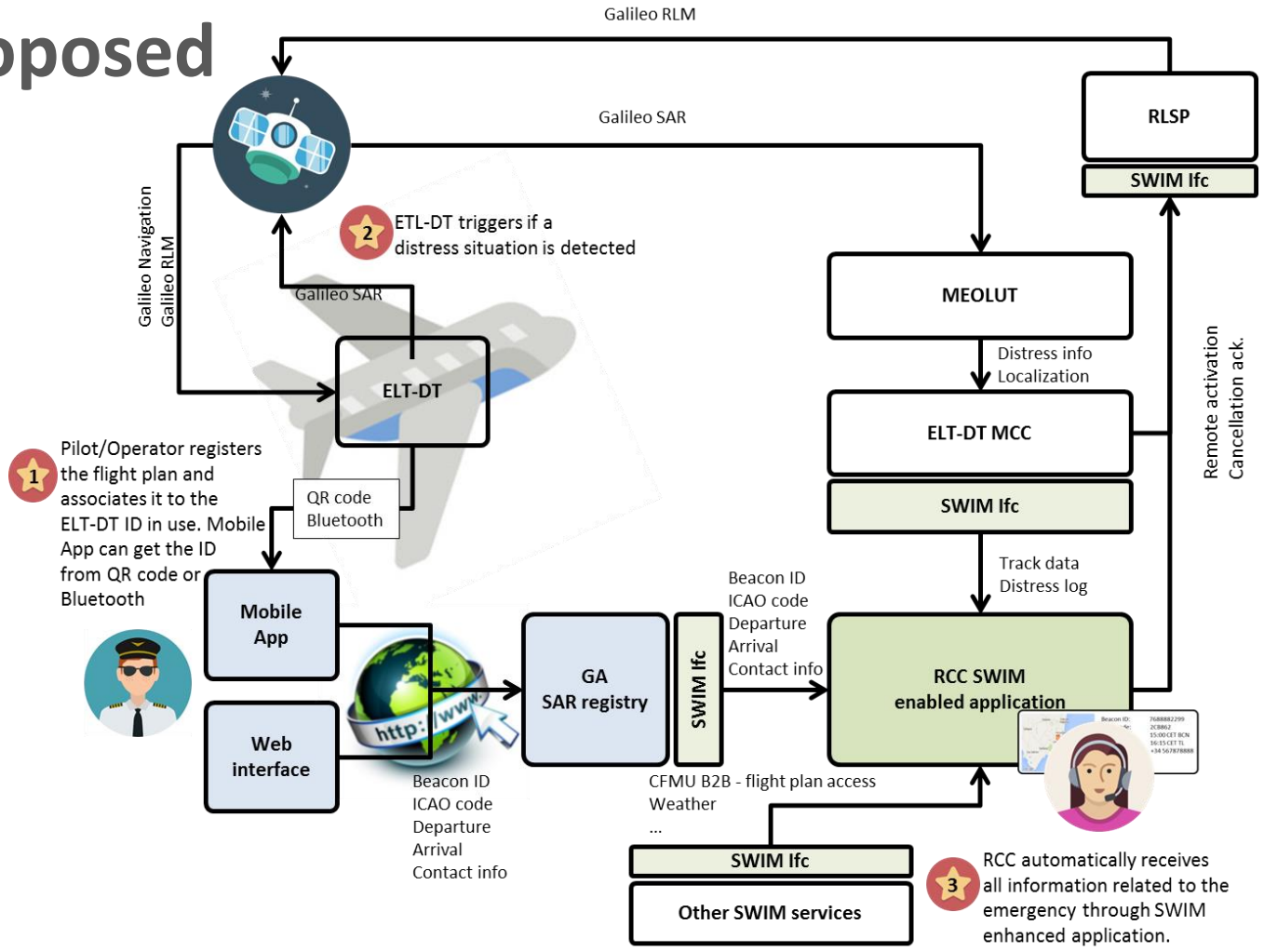
The following SWIM services will be developed to feed the RCC application:

- MEOLUT/MCC SWIM service: providing tracking information as new positions are computed by MEOLUT.
- General Aviation SAR registry SWIM service: providing the operator contact information, pilot information, flight plan, etc.

The RCC application could also get additional information from already existing SWIM services (e.g. EUROCONTROL B2B services to get the flight plans)

3 – GRIMASSE solution

Solution proposed



Questions - Operation

- Which types of distress alerts can you receive and manage?

Categorization to be based on the communication channel used to receive the alert (radio link, Cospas-Sarsat beacons, phone call, etc.).

- In general terms, what is the chain of actions undertaken to process each type of alert?

Involved departments, internal/external communications, aircraft operations, etc.

- What is the average response-time between the reception of an alert and the take-off of rescue aircrafts and rotorcrafts?
- What communication means do you use during the alert management to collect information about the aircraft/rotorcraft in distress?
- Do you operate differently if the aircraft/rotorcraft in distress is equipped with a C/S SAR beacon? If yes, please detail the differences.
- How is it defined the extension of the search area for the rescue team?

Questions – Operations

- Have you ever met a rescue situation made unnecessarily complicated and risky? Was it due to a lack of coordination? Communication? Human errors? Device failure? Unexpected behaviors of the victims? Others?

- Are you satisfied with the overall international standardization or are there specific concerns (regulation, additional interfaces or point of contacts, latency to get data…) when the person in distress and the rescue teams are not from the same country?

- What would you change to improve SAR operations?

Unified information system, new communication protocols between actors, standardisations of tools, automation of tasks, information and training of the users to use SAR beacons, number of rescue operators/aircrafts, geographical distribution of bases, new IFR procedures for operating under non VFR conditions etc.

Questions – personal feedback

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	The SAR operation management procedure is efficient and performing					
	The coordination between actors involved in SAR operations is efficient in terms of latency, quality and quantity of information exchanged					
	The SAR actors' response time is good (including the complete rescue operation)					
	The SAR actors' workload during the alert is acceptable (contacting other SAR actors, coordinating operations, collecting information…)					

Thanks for your attention