

Supporting
European
Aviation



Surveillance Services

Enabling complete Air Situation Awareness

High-level Workshop on Drone incursion and detection at and around airports
3-4 October 2019
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NMD/INF/CNS



Complete Air Situation Awareness ?

- One common view for all users
 - Comprehensive
 - Accurate
 - Resilient
 - Accessible
- All traffic types together (Aircrafts, drones, gliders, balloons, etc.)
- All available sensors (radar, ADS, Flarm, C-UAV technologies, etc.)
- Continuous across complete airspace

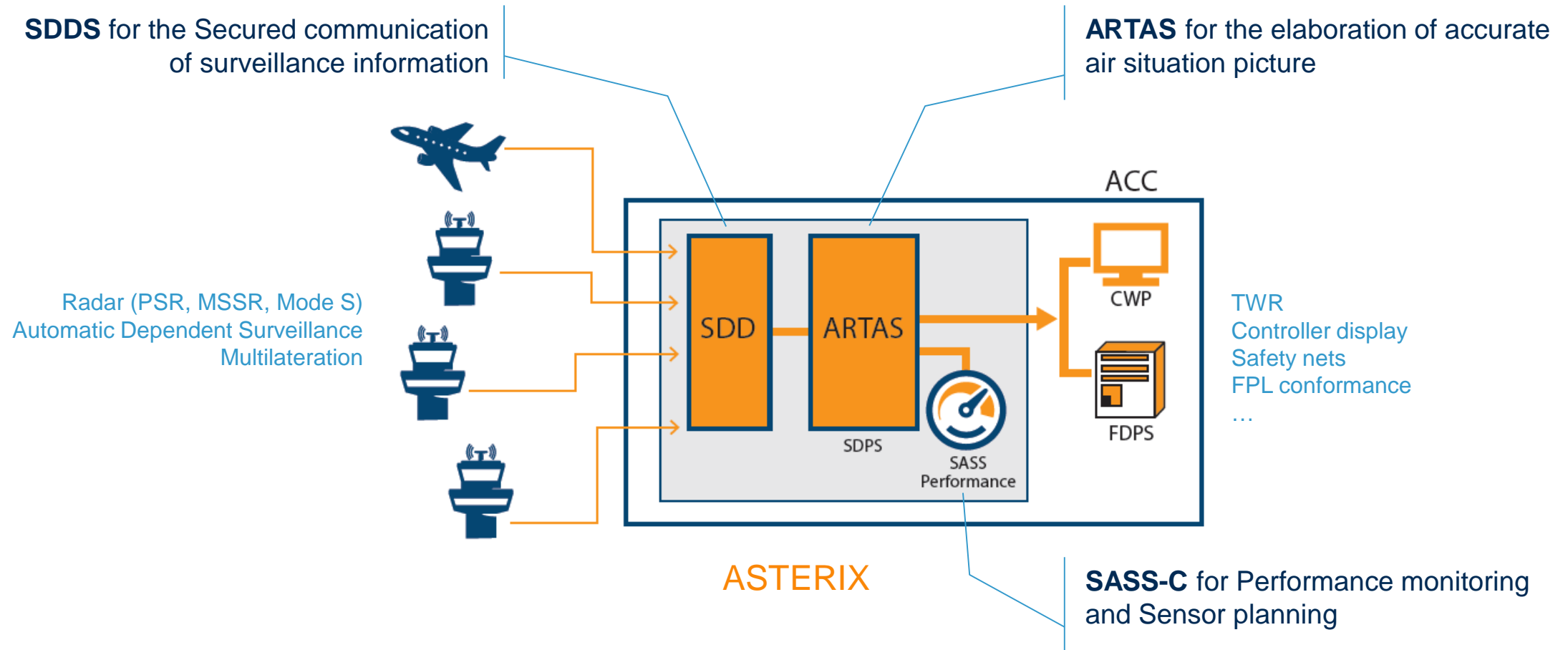
Interoperability

EUROCONTROL experience : surveillance services

Development and deployment of common surveillance infrastructure components

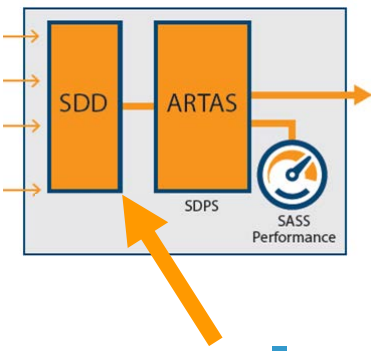
- Performance benefits
 - High quality Surveillance data → safe application of optimum separation minima → Safety and Capacity
- Systemic benefits
 - Harmonisation : wide deployment leads to natural standardisation
 - Defragmentation : flexibility to fit any surveillance environment
 - Interoperability : reduction of costs for interconnected systems
 - Coordination : towards new technologies in a harmonised way
- Economic efficiency
 - Economies of scale from common procurement and organisation of centralised maintenance

Three complementary surveillance chain components



Development and Maintenance & Support Service through EUROCONTROL since the early 90's

Surveillance Data Distribution

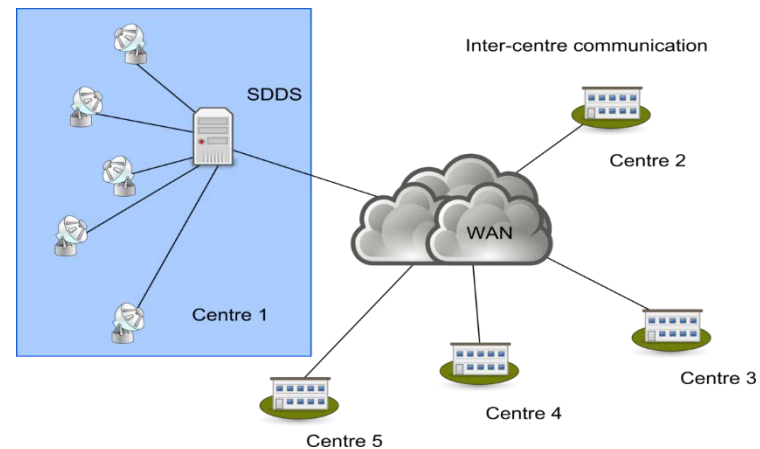


- **ASTERIX**

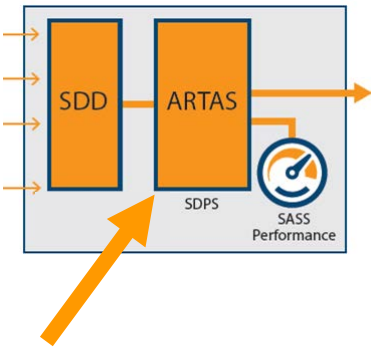
- All Purpose STructured EUROCONTROL suRveillance Information eXchange
- Worldwide standard format for surveillance data

- **SDDS**

- Network node for intelligent surveillance data distribution networks
- Scalable communication platform providing redundancy, system management and IP services
- Advanced security features

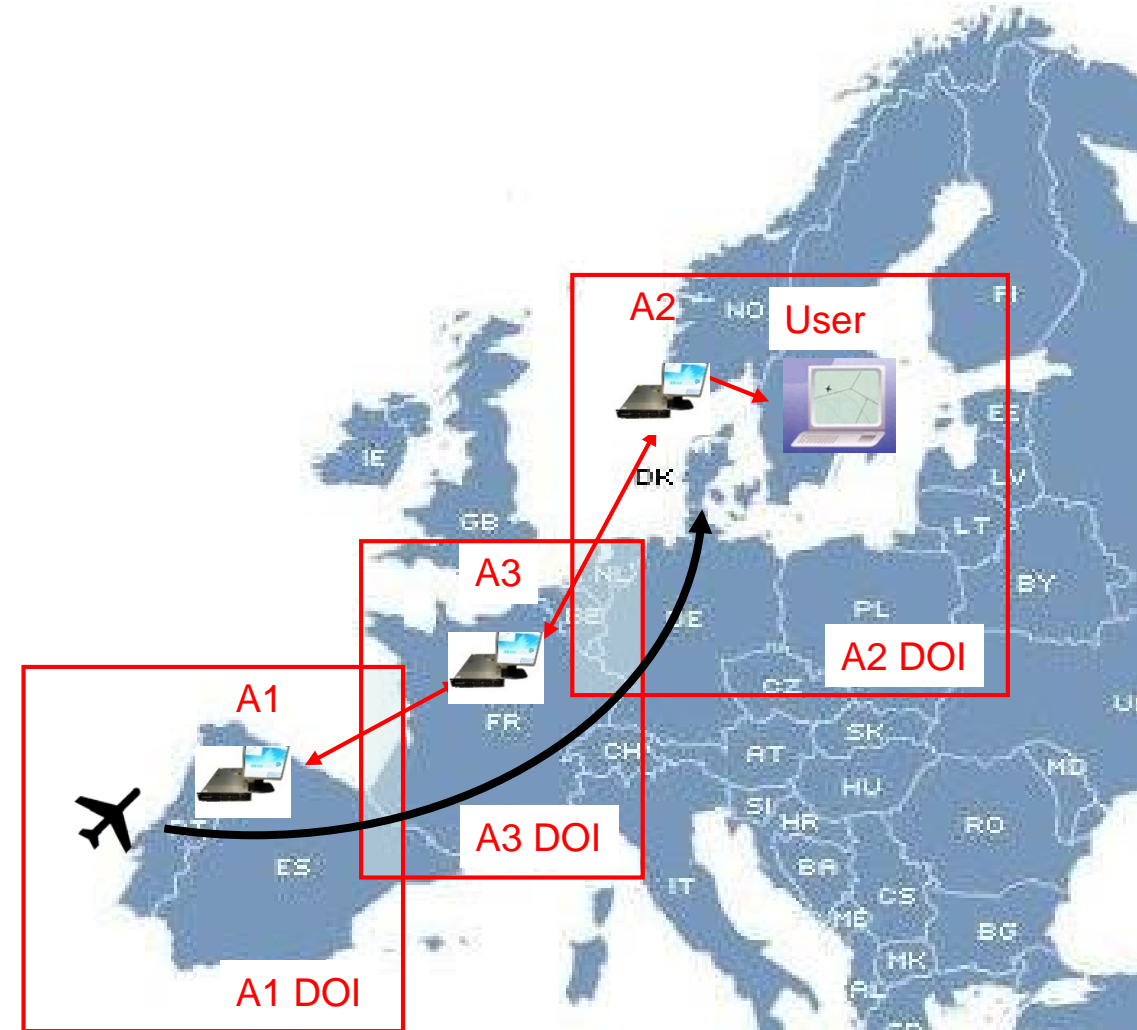


Surveillance Data Processing

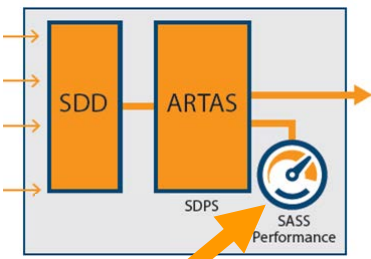


ARTAS : ATM suRveillance Tracker And Server

- One of the most concrete element of ATM infrastructure rationalisation in Europe
- Distributed surveillance data processing system
 - Advanced tracking technology
 - Cooperating systems concept
- 20 years of continuous improvement
 - Surveillance technology upgrades (Mode S, ADS-B, Multilateration)
 - Increased performance and capacity
 - > 2.000.000 hours field experience
- 42 operational sites within the EUROCONTROL member states



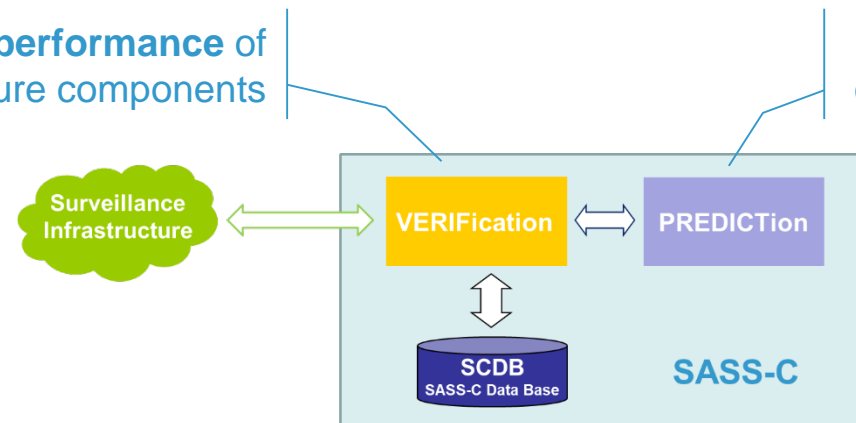
Surveillance performance assessment



- SASS-C : Surveillance Analysis and Support for Centre
- Reference in Europe for the evaluation of Surveillance infrastructure performance
 - To verify compliance of surveillance infrastructure against standards
 - To support incident investigations
 - To support development and installation of new surveillance system
- Cost effective for day to day operations, no need of test flights
- Independent from Sensor manufacturers

For assessing the **actual performance** of the surveillance infrastructure components

For estimating the **expected performance** of the surveillance system before installation



Drivers for the evolution

Towards a digital European sky

- Improve ATM system flexibility
 - Continued defragmentation of processing capabilities with strengthened interoperability
 - Virtualisation to abstract from geographical boundaries
 - Infrastructure optimisation to limit redundant systems
- Accommodate new entrants
 - Comprehensive Air situation awareness
 - Surveillance of Drones in addition to all other air traffic
- Ensure resilience
 - Cyber Security
- Technology upgrades
 - Additional surveillance techniques (e.g. drone detection, FLARM)
 - Tracking techniques evolution (AI)



Thank you for your attention