



*NLR Air Transport Safety Institute*

*Research & Consultancy*

## *Coordination Area Safety*

**Dr. Ir. L.J.P. (Lennaert) Speijker**

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## Main objective and tasks

**Close the gap between end-users and equipment manufacturers and the regulatory authorities in defining a consistent set safety requirements and safety assessment procedures that are acceptable for the authorities to serve as a baseline for the operational approval of actual new systems or procedures.**

**Task 1: Safety requirements and regulatory framework**

**Task 2: Safety assessment**

**Task 3: Incident monitoring and analysis**

# Task 1 (NLR): Safety requirements & Regulatory framework

**Create common understanding on the applicable rules, regulations, and associated safety requirements, for *operators, service providers, manufacturers, end-users***

**... what is acceptable for *regulatory authorities* to serve as baseline for the operational approval of new wake vortex advisory systems or procedures?**

## Task 2 (Airbus-D): Safety assessment

**Promote information exchange and communication between partners, participants and stakeholders on requirements, development, definition, validation of**

- 1) *wake vortex encounter severity criteria*
- 2) *safety assessment methods*

## **Task 3 (DFS): Incident monitoring & analysis**

- 1) Establish/maintain a link to existing wake turbulence incident reporting activities (such as the one in UK).**
- 2) Implement WV reporting and analysis at Frankfurt airport, using UK best practices as starting point**
- 3) Trigger incident monitoring/analysis at other airports**



# ICAO Wake turbulence provisions

***ICAO Annex 14 Aerodromes is the only regulatory standard document that mentions the issue of wake turbulence separation minima, by referring to the PANS-ATM (Doc 4444)***

***Wake turbulence separation minima guidelines are laid down in:***

- 4.9: Wake turbulence categories
- 5.8: Non-radar wake turbulence longitudinal separation minima
- 8.7.4: Radar separation minima

***Various states use deviant radar separation minima, based on national experience and reported incidents. The regulatory framework inherently incorporates substantial freedom for the states to tailor criteria and requirements to local circumstances***



# ICAO Wake vortex advisory system guidance

**ICAO Doc 9426, Part II, Chapter 3, Appendix A, states that [..] a wake vortex avoidance system should meet as requirements:**

- replace fixed wake vortex separation minima with separations adapted to individual cases, thus optimizing traffic flow;
- detect the presence of a vortex hazard and generate information necessary to avoid it;
- make the system ground-based. No additional avionics should be required to obtain the use of the system;
- use a modular system design, tailoring the system capabilities and cost to specific requirements;
- use a complement of ground instrumentation to ensure uniform system performance independent of site constraints;
- design the system for maximum independence from other ATS systems to ensure maximum system reliability
- use of the system shall not place any additional burden on air traffic controllers or pilots.