

# **RADAR BIRD INTENSITY DETERMINATION, OPERATIONAL BIRDTAM BROADCASTING TOWARDS BELGIAN AIR FORCE PILOTS AND PERSPECTIVES OF THE ESA FLYSAFE PROJECT**

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## **ABSTRACT**

Since the seventies, Belgian Air Force (BAF) delivers birdstrike risk warning messages (BIRDTAMs) to its pilots. In 2004, the Belgian BIRDTAM office followed the example of RNLAf and implemented the ROBIN system (Radar Observation of Bird Intensity). Nowadays, thanks to collaboration between different Air Forces, the European Space Agency (ESA), scientific and industrial partners in the FlySafe Project, the radar bird observations become more accurate and coordination between different countries leads to a more consistent N-W European BIRDTAM network.

For the ornithologists, radar bird observation is an unusual and exciting way to study bird movements and bird migration; for pilots, high bird intensity is a problem. Of course, BIRDTAM aim at increasing flight safety, but as it often occurs with safety advices, pilots tend to consider them as a flying operation restrictor; and indeed, it is !

In 2007, 73 nights were concerned by bird intensity higher than 5 (on a scale from 1 to 8) and about 25 % of “night flights” operations were affected by BIRDTAMs. This impact on operation with all the secondary effects on the organisation of an active airbase requires essential accurate, well defined BIRDTAMs.

The BAF experience has figured out the importance of some unexpected problems in broadcasting BIRDTAMS and their application by the pilots. Indeed as relevant as a bird detection can appear, sometimes what is appearing as details in the last links of the system can ruin all the effort made previously. Difficulties in the chain from extracting the BIRDTAM until the operational impact by the pilots are discussed. You can have the best radar bird detection system ever, if you are not able to quickly broadcast the information to every pilot, or if the pilot community do not trust your system, you totally miss your flight safety goal. The entire system, from the radar detection through the ornithologist interpretation to the pilots, must fit the pilot’s needs.

The paper explains the main lines of the Belgian BIRDTAM determination and draws the attention on the encountered problems. It explains how Belgian BIRDTAM office developed a fast and redundant way of broadcasting BIRDTAMs to the pilots.

It also highlights the coordination and coherence problems encountered with BIRDTAM offices in neighbour countries, and the differences in flying restrictions in case of BIRDTAMS.

Finally, it demonstrates how the ESA FlySafe project can solve those problems and how his side « BIRDTAM forecasting » can be of first importance in the planning of operational flying.