



# MITIGATING THE RISK OF MID-AIR COLLISIONS WITH **REMOTELY PILOTED AIRCRAFT SYSTEMS (RPAS)**

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# ABSTRACT

With almost daily reports of near misses between commercial air traffic and remotely piloted aircraft, it is imperative that operators and pilots from both aviation disciplines appropriately evaluate and consider ways of avoiding each other in the air.

Existing systems installed today in commercial aircraft to detect and avoid other aircraft, while very successful, remain limited in their capability to be able to fulfil the same function when it comes to RPAS. Therefore, as an industry, we need to urgently find innovative and workable methods to avoid mid-air collisions.

This paper identifies possible areas of improvement for both manned and

unmanned flight operations while considering, and in some instances expanding upon, existing aviation safety systems or 'Safety Protection Layers'. It explores the options available in terms of Regulatory Guidelines, Aviation Safety Management Systems, Human Factors and Technology. To be able to propose reasonable and attainable mitigation actions to prevent mid-air collisions, a broad understanding of currently available safety mechanisms (Regulations, SMS and Human Factors) is important while at the same time keeping one eye on possible future Safety Protection Layers (Technology).

In line with SGS HART Aviation's use of the SFAIRP concept in RPAS risk management services, this paper provides the reader

with realistic practical tools to consider for implementation in their aviation organisation to be able to demonstrate that the specific risks associated with mid-air collisions are mitigated to a level that can be described as "So Far As Is Reasonably Practical" – SFAIRP.

In a world of 24hr news access, internet and social media, we are made aware of the ever increasing amount of incidents where near misses between RPAS and manned aircraft are reported. Should this trend continue, logic, slow pro-active implementation of mitigation measures by aviation stake holders and the continuously increasing number of RPAS being introduced in the same size airspace globally suggest that the inevitable will happen sooner, rather than later.

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