

I'm speaking on behalf of the Hermes 2020 Report Committee, consisting of Andreas Papatheodorou, Robert Deillon, Triant Flouris, Jose Guedes Dias and myself. Our committee was tasked with developing recommendations on Digitalization, Artificial Intelligence in Aviation and the Human Factor. Our report is based on the contents of 14 position papers on this subject received from leading industry and governmental associations.

The briefs were submitted prior to the current crisis impacting the aviation industry. In the pre-coronavirus era, with strong growth and robust profits through much of the aviation industry, the concern was how to best use these new technologies to help the industry accommodate a doubling in capacity over the next 30 years. The governmental and industry associations felt that these technologies could help aviation in several ways:

- AI technology can be used in the maintenance field to predict possible failure of parts.
- AI can be used to improve the functioning of autonomous vehicles, such as ground handling equipment and drones.
- AI can be used to better control aircraft movements to increase efficiency and improve safety.
- Using the data generated by aircraft and their systems, smart algorithms can be used to detect hazardous behaviors.
- Digitalization can help develop a better understanding of the businesses, routes, costs and opportunities for improvement.
- Digitalization can help the aviation industry better understand traveler needs and to improve the passenger experience.
- Digital technologies can change the way training is delivered; for example, through the development of virtual reality devices.

However, there are considerable hurdles that must be overcome in the implementation of these technologies. These include:

- Developing and Implementing Standard Practices.
- Convincing governments to adopt the standards and enact enabling regulations.
- Allowing for the sharing of data but protecting the privacy of individuals.
- Paying for the implementation of the technologies, especially in developing countries.
- Developing and training the workforce needed to implement the technologies.

Based on the input from the trade and governmental associations, our Report Committee has the following recommendations to guide the implementation of these technologies:

- ICAO needs to take the lead in developing a roadmap for the implementation of AI and digital technologies in the industry.
- The implementation of industry standards can be best accomplished through industry associations. These industry associations should proceed concurrently with ICAO standards development. Concurrent development will help ensure that the standards are workable and will speed their development.
- Funding sources for technology implementation must be identified to ensure that aviation firms around the world can participate in these new technologies.



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- Finally, training and development in these new technologies should be implemented immediately. The current downturn of the industry has idled thousands of industry employees. Now is an ideal time to engage in training and re-training for the future needs of the industry.

Professor Martin Dresner, Chair of the 2020 Hermes Report Committee