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Cyber security and the challenges facing the aerospace sector

Aéro Montréal organized the 2016 Aerospace Innovation Forum intended for stakeholders in the global aerospace sector and their suppliers on April 25 and 26, 2016 in Montréal, Canada. The primary goal was to discuss best/good practice in relation to innovation.

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At a time when the aerospace sector is stepping up its digital transformation, cyber security is now, more than ever before, a top concern and will be discussed in-depth during the two-day event.

Key aircraft functions, such as flight navigation and control, propulsion, landing and braking, and information systems, are all managed by embedded electronic systems and associated "safety-critical software". This software is deemed to be "safety-critical" because flight security is reliant on their working correctly. Such software must meet highly stringent certification standards and undergo numerous tests and audits before it can be used on board.

> *It is crucial to ensure that aircraft are only fitted with authorized and authenticated software to avoid any hackers taking control of the aircraft and to avoid any malicious or counterfeit software interfering with the aircraft's behavior or collecting any confidential data.*
>
> *Laurent Porracchia, Director of the Industry, Defense and Government business unit*

The use of an electronic signature to seal and protect the embedded code meets these fundamental needs by ensuring authenticity and integrity throughout the system's life cycle (creating, supplying, integrating, updating and maintaining the code).

Electronic signatures are also used in other ways to ensure the security of the digital transformation in the aerospace industry. They have proved to be very useful when it comes to **maintaining aircraft**.

> *The data collected during flights (aircraft operation, incidents, etc.) are used by maintenance teams. Checking their electronic signatures provides a means of ensuring they're complete and reliable.*

Furthermore, maintenance orders can be electronically signed using tablets. These electronic signatures help ensure that orders are not rejected, employees' accreditation is verified and operations are traceable in order to meet regulatory requirements. There are numerous benefits: "The use of tablets and electronic signatures does away with paper and, as a result, speeds up and facilitates maintenance work for teams, and maximizes the dispatch reliability of aircraft, by reducing the amount of time aircraft are grounded for," says Laurent Porracchia.