

Benefits of Informed Decision-Making in the Aviation Industry

Col. Mark Wilson

SSO Air Combat Plan,
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SHOWCASING SESSION 1

SHORT BIO

SAAF Strike Navigator

- Operationally qualified strike leader on Gripen
- A-Category Instructor
- Senior Staff Officer Air Combat Planning
- 2nd in Command of Space Command Implementation Planning Team (SCIPT)

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Benefits of Informed Decision-Making in the Aviation Industry

Effects of Space Weather

- *Communication*
 - High Frequency (HF)
 - Very/Ultra High Frequencies (V/UHF)
 - Satellite communication (L band)
- *Navigation*
 - GNSS
- *Aircraft Avionic systems*
 - Single Event Upsets (SEUs)
 - Static buildup
- *Radiation*
 - Altitude
 - Polar regions



Benefits of Informed Decision-Making in the Aviation Industry

Implications

- *Communication*
 - Air Traffic Management
- *Navigation*
 - Position/Timing/Navigation errors
- *Aircraft Avionic systems*
 - Complete/Partial failures
- *Radiation*
 - Increased exposure



Benefits of Informed Decision-Making in the Aviation Industry

Mitigations due to accurate Space weather forecasting

- *Avionic design*
 - Hardening
 - Redundancy
- *Flight planning optimization*
 - Minimise disruptions
 - Operational costs
 - Reduced radiation exposure
- *Decision support*
 - Maintain high safety standards
 - Reduce insurance and liability
- *Equipment lifespan*
 - Ground
 - Aircraft
 - Space



Thank You

