



EUROPEAN DEFENCE AGENCY

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Artificial Intelligence enhanced Flight Termination System

Enabling a safer emergency management in drone operations

CONCEPT OF OPERATIONS

- A MALE RPA is flying a mission with a **predefined nominal** route to a destination airfield.
- A **loss of C2 Link** occurs → The RPA will switch to a preplanned **contingency** route to an alternative airfield.
- A loss of power occurs → The RPA will switch to a preplanned **emergency to a Flight Termination Areas (FTA)**
- The **RPA is unable to reach the predefined FTA** (e.g., degradation of the platform, head wind...) → **Uncontrolled Flight Into Terrain**

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- **SAFETERM is engaged**
 - **Classification of the terrain**
 - **Alternative FTA within the aircraft's flight range**
- **The RPA will terminate the flight in the AFTA**

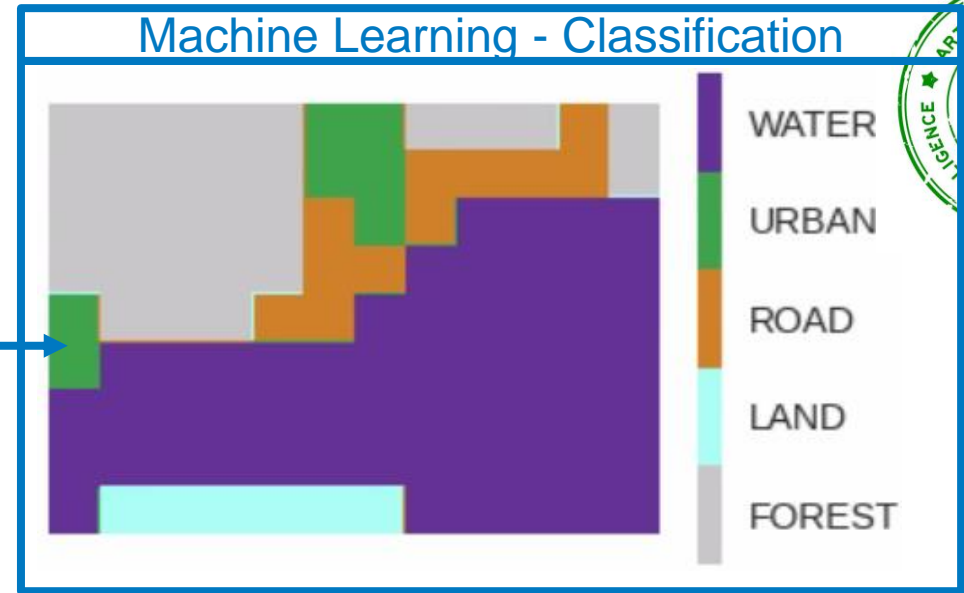


The system uses **Artificial Intelligence** to identify low risk Alternative Flight Termination Areas in case of emergencies leading to an imminent flight into terrain.



HOW DOES SAFETERM WORK?

RPA onboard camera

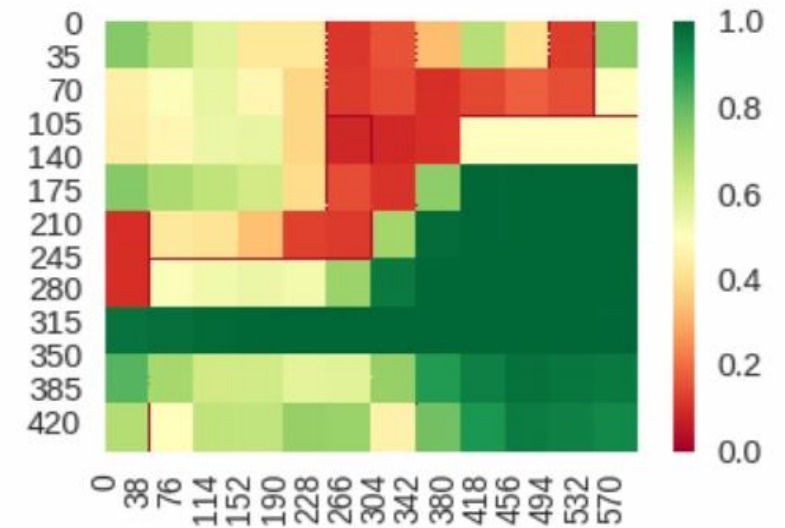


Rule-based - Selection

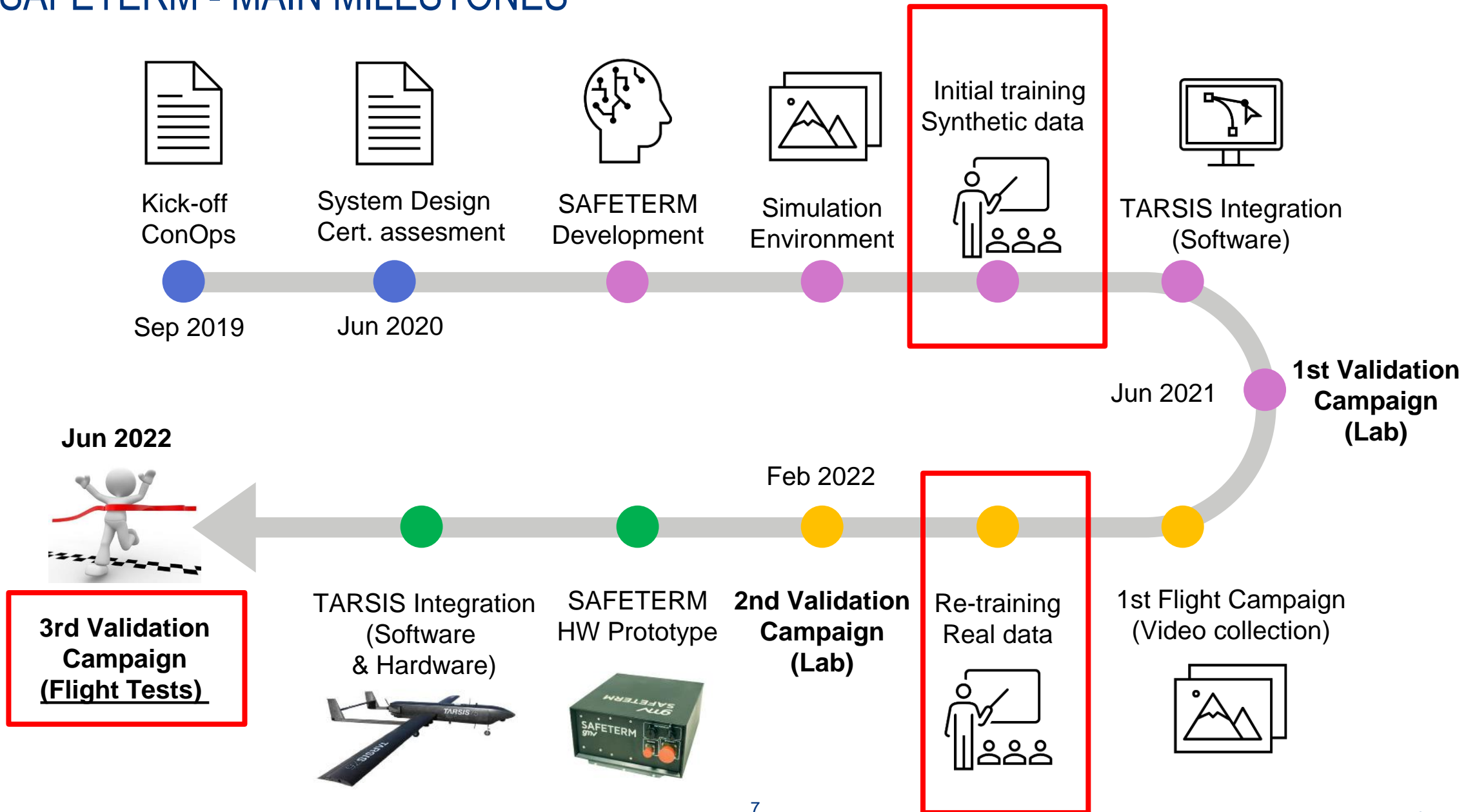
Rule-based - Prioritisation



index	centroid	score	radius
0	[545.311, 394.870903]	0.836	44.014
1	[233.6888, 299.27754]	0.517	167.726
2	[461.0163, 55.000306]	0.175	44.843
3	[399.387, 140.782262]	0.152	42.509



SAFETERM - MAIN MILESTONES





After two years of design, development and thorough validation, the system was integrated in the TARSIS75 RPAS for flight testing



Questions?

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Thank you for your attention !