

## Synapse – *Beyond Navigation*

Due to the increasing complexity in the nature of their missions, unmanned systems are becoming operationally inadequate in most situations. Drawing from its expertise in Data Fusion and Autonomous Route Planning, Roke has developed Synapse, an ‘intelligent navigator’ for unmanned systems.

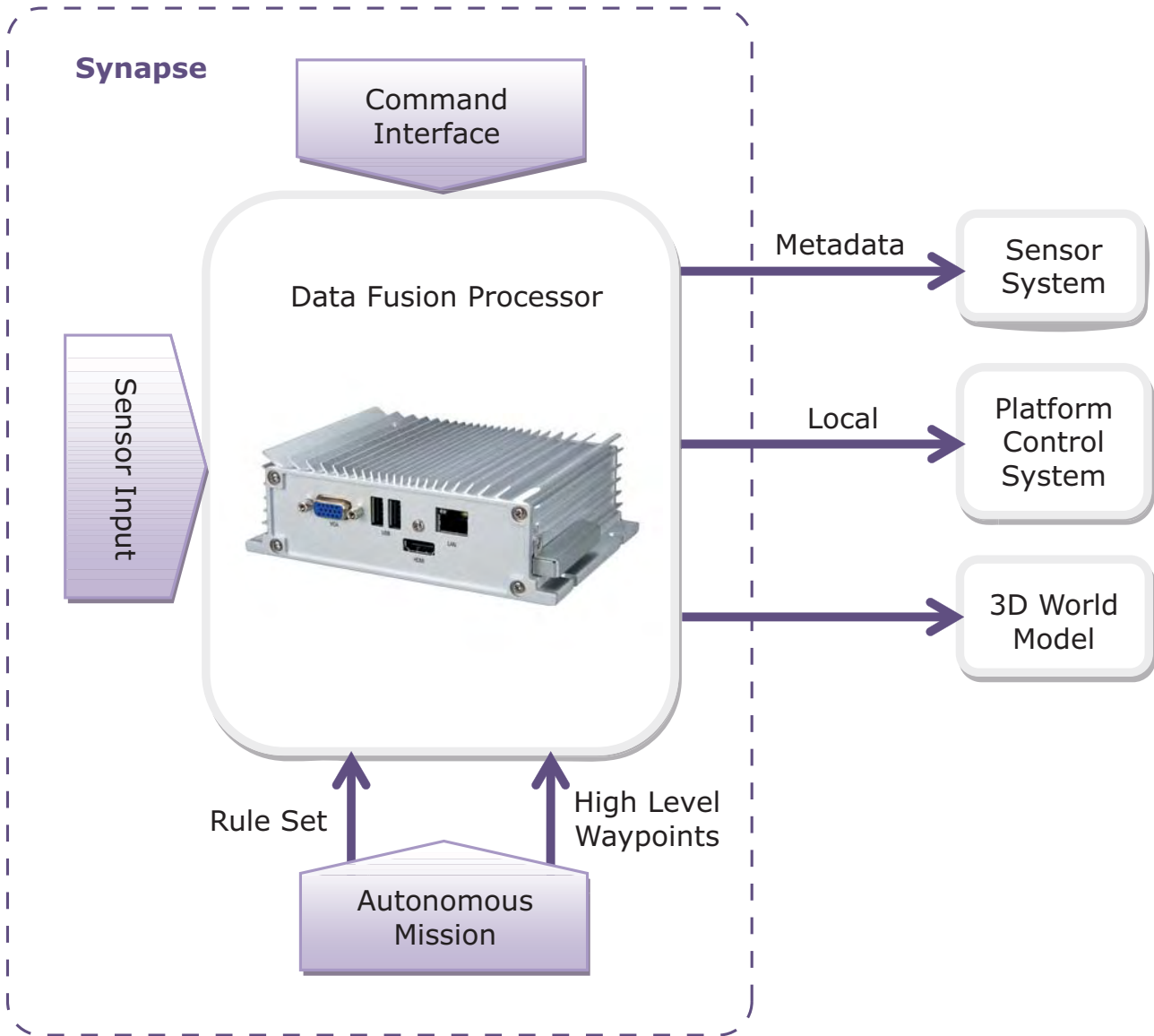


### Key Features and Benefits

- Cost Reduction – Platforms with Synapse require less operational and support infrastructure (e.g. remote operators).
- True Autonomy – Synapse allows your platform to operate without C2 signal transmission; which will extend its operational range beyond the line of sight and allow Covert Mission capability.
- Extendable System – Synapse has the capability to handle additional sensors when needed; which allows for a rapid mission adaptation and high persistence for critical missions (e.g. ISTAR).
- Efficiency – Synapse implements optimised route planning for power saving and survivability in contested terrain.
- Point & Click – Synapse’s route planning algorithm can generate waypoints in an unstructured environment from a Point & Click user interface.
- Open, Plug & Play – Synapse implements the Joint Architecture for Unmanned Systems (JAUS) for simple system integration and interoperability.

Synapse receives high-level mission goals, which the Autonomous Mission Management module translates into intermediate local waypoints that satisfy route optimisation criteria (e.g. maximising safe space and minimising power).

The Data Fusion Processor combines sensor data to provide: World Model information; data feed to the platform control system; and metadata to sensor systems.



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