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MIMIR'S WELL: SAABS AI-BASED INTERFACE TO FUSE DATA FROM SATELLITES AND
OTHER SOURCES FOR FAST AND SMART SITUATIONAL AWARENESS AND SITUATIONAL
DIRECTION

Abstract

Mimir's well is a data interface created by Saab for satellite data fusion with information from various other platforms. Mimir's Well is sensor and application independent with Artificial Intelligence (AI) capability. It is a microservices-oriented platform enabling for quick updates and quick addition of new functionality. It can have many data sources added to it and serving military applications as well as civilian applications. Continued, updated imagery over a desired area would allow a user to track an object of interest in real time. Mimir's Well can record sensor data from various sensors such as Earth imaging satellites and synthetic aperture radar satellites. However, this data interface is not just a digital binder for satellite imagery but also a single platform for big data on situational awareness. Mimir's Well fuses sensor data with open sources of intelligence such as Automatic Identification System and Automatic Dependent Surveillance-Broadcast. It can also integrate its sensor data with electronic support measurements and electronic intelligence for military reconnaissance purposes. Data accumulated over time enables a user of this interface to chronologically study, compare, and detect behaviours, patterns, and/or signals in the area of interest or from object of interest. Therefore, Mimir's Well not only provides excellent situational awareness, it also provides a situational direction and intent.

The interface's AI capability enhances situational direction. The interface puts data in the context of space and time. Mimir's Well builds stacks of data with each stack belonging to a specific geo-location. It uses its AI capability on the stacks to infer and predict locations, patterns, or behaviour of objects. AI enables not only object detection but also object distinction such as distinguishing between various types of sea vessels. Storage of profiles of known objects in this system will enable its identification every time it appears in satellite imagery. Further, the interface has land-use development purposes such as damage assessment of an area during and after a natural disaster or tracking activity in a busy urban area.

Through its unique combination of AI capability and fusion of satellite imagery with sensor data from air, ground, and/or sea platforms, Mimir's Well enables better data accessibility and faster and smarter usage of data.