Machine Assisted Rapid Repository Services
(MARS)-Infrastructure

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MARS is the Defense Intelligence Agency's flagship effort to create a dynamic environment for intelligence analytics. It is transforming the existing system housing foundational military intelligence into a dynamic, cloud-based system that pairs human with machines to automate routine processes and enable the artificial intelligence and machine learning needed to make sense of big data and to create analytic bandwidth.
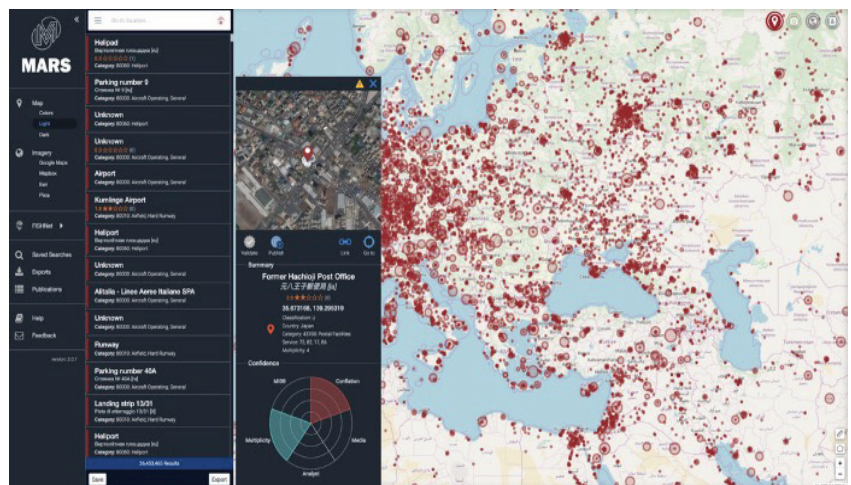
MARS automated the object-based production of foundational intelligence using conflation and analysis of data streams, then improved the Modernized Intelligence Database (MIDB) to integrate automatically-generated observations and assessments with analyst inputs. This system allows clients to determine how much uncertainty they are willing to assume when researching, ensuring all observations are ingested and tagged with confidence and provenance information.

Through automation, the number of global areas which can be monitored scales beyond the capacity of analysts, allowing them to focus on high-value areas. Over 12 billion objects (i.e., facilities) are currently analyzed. Advanced conflation algorithms were created and continue to be improved to combine multiple disparate and non-synchronized data and sensor feeds, effectively providing constantly updated "observation perspectives" on any facility. These algorithms exploit different sensor modalities to create a more holistic and confident assessment of targets. Prior to conflation, using machine learning to enrich raw data at scale is now producing more than 4 million predictions per day, including object/scene detection in images and media (over 160 different models and algorithms for automatically identifying objects of interest), text recognition, semantic concept extraction, and translation.

BigBear.ai provides the critical military and infrastructure data and artificial intelligence/machine learning for the MARS program.

> The results were simply amazing! More importantly, on May 28, 2020 the world changed and how we deliver decision advantage through understanding of the operational environment and military forces will never be the same. Each of you should be justifiably proud of this accomplishment and its historic nature. Thank you!"
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> DIA Chief of Staff

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