The production trial proved that a complete solution: storage + compute + network + data mover software, for moving data at speed and scale between Central Europe and South-East Asia is now readily available. For this project, the only new infrastructure element is the newly built CAE-1 100Gbps network. Everything else is readily available, including existing hardware and storage.

**COST-EFFECTIVE**

The solution was implemented and work well on older generation hardware and we proved that moving 1PB from Warsaw, Poland to Singapore in less than 2 days for example, can be achieved on our production trial infrastructure.

The ICM Lustre pool consists of two volumes. Each one is built using HDDs only and connected to the ICM DTN using an InfiniBand FDR HCA (theoretical upper bound 56 Gbps, 45-50Gbps in practice, 2011 technology). What the trial shows, is that there they can be aggregated transparently.

**FUTURE PROOF**

Everything used in the trial is capable of scaling-out. Lustre is an inherently cluster oriented parallel file system. Zettar zx is one of the only three U.S. DOE funded data mover applications (GridFTP, Argonne, 1996; XRootD, SLAC, 2005, zx, Zettar Inc., 2019) that is cluster oriented.

ICM DTN is done right for this project: it has no internal storage like most demo DTNs do. A true production like two-tier setup, with the DTN strictly as a compute node is used.
The goal of the application is to monitor and collect distress signals sent by aircraft and collect
in particular squawks 7500, 7600 and 7700.
The system downloads ADS-B data from FlightAware in a real-time manner and stores filtered, normalized
and aggregated records at ICM data repository.
An API in a form of RESTful web services is provided
with a feed of current in-flight emergencies, including
their importance, geographic features and time
trends, as well as a query interface for past events.
In addition, the system filters out false positives.
The alerts related to current emergencies can also be
actively fed to interested external parties (such as CAAs
and ANSPs, etc.).
AI IN BIOMEDICAL IMAGING

- Healing monitoring
- Disease detection
- Long-term predictions
- Radiologic workflow optimization
- Segmentation
- Radiomics
- Surgery planning
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Focused on scientific visualization
Implemented in Java
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Support for large datasets
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