

**Methane Moment:
High Level Operational Data &
Security**

What This Decks Contains

- This is the third of seven high level overviews of the proposals:
 - [Chemistry, Toxicology, Environmental Effects and Dispersal](#)
 - [Governance](#)
 - [Operational Data and Security](#)
 - [Costs Overview](#)
 - [Methane Moment & Politics](#)
 - [Program/Project Plan](#)
 - [Background Story](#)
- This one contains:
 - High-level overview of operational data required to successfully operate the complex systems
 - High-level end to end security requirements to mitigate against successful attacks by malicious organizations and countries

Methane Moment Pitch Package

This deck is part of a Methane Moment package:

- [Website](#)
- [Methane Moment Pitch deck](#)
- **High Level Summary Decks:**
 - [Chemistry, Toxicology, Environmental Effects & Dispersal](#)
 - [Governance](#)
 - [Operational Data & Security](#)
 - [Cost Overview](#)
 - [Methane Moment & Politics](#)
 - [Program/Project Plan](#)
 - [Background Story](#)
- [Reference Document](#)
- [Methane Moment Cost Estimates](#)

The Arctic is Vast

- Monitoring the vast arctic for methane bursts and ice melt, in real time, requires LOTS of data
- Hypothetically, how can this be done?
- Satellites (and possibly commercial aircraft)

Satellites

- Today on the planet there's a number of different satellite operators exist with some form of methane detection:
 - **MethaneSAT**
 - **GHGSat**
 - **IMEO - International Methane Emissions Observatory (IMEO)**
 - **Prisma**
 - **GEI-SAT**
 - **TROPOMI – European Space Agency**
 - **Carbon Mapper**
 - **Kayrros**
 - **Others?**

So, the First Order of Business...

- Is to create contracts with the appropriate satellite providers, whose satellites are capable of doing near real time monitoring of the arctic, able to detect methane bursts

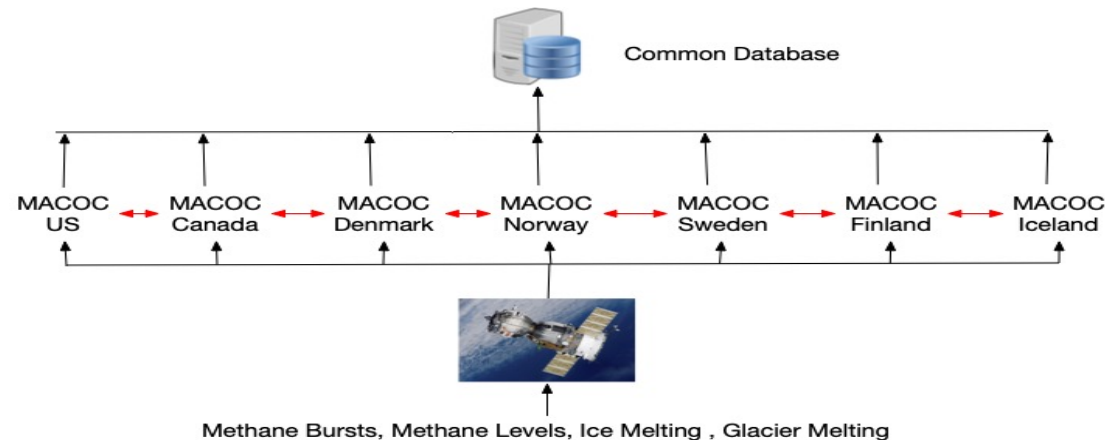


Possibly Commercial Aircraft

- If all the required data isn't easily available from satellites, then it's hypothetically possible to retrofit sensors on commercial jets which fly over the arctic
- These could report, in real time, methane readings

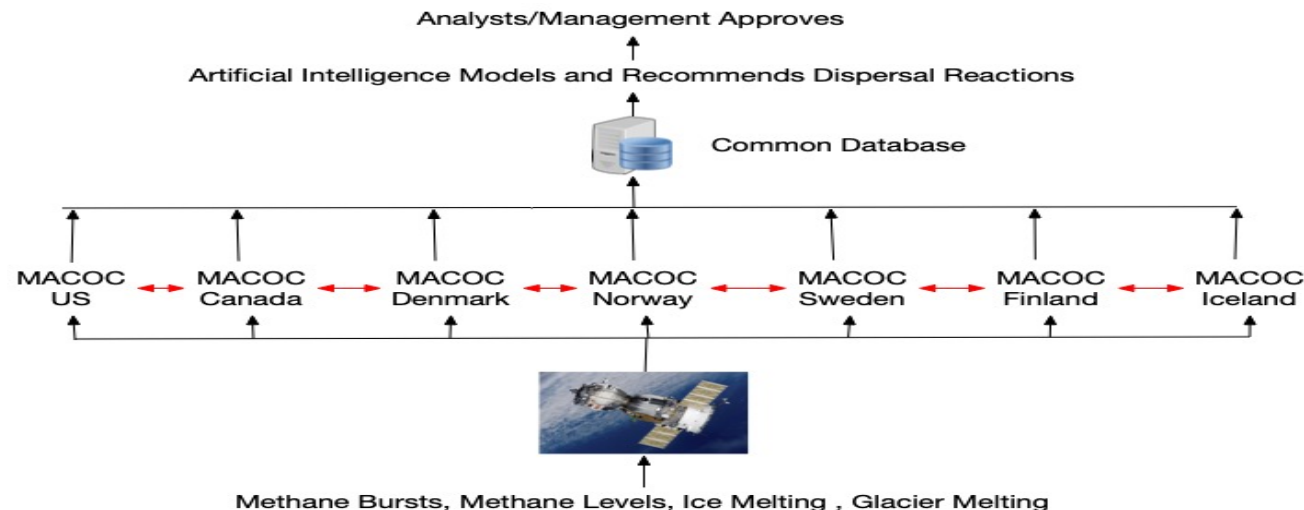
Data Flows Into Operational Centers

- The live satellite data flows into jurisdictional operation centers
 - These are called MACOCs (Methane Arctic Cooling Operational Centers)
- There's one in each jurisdiction, yet, they're all tightly integrated, flowing into common databases



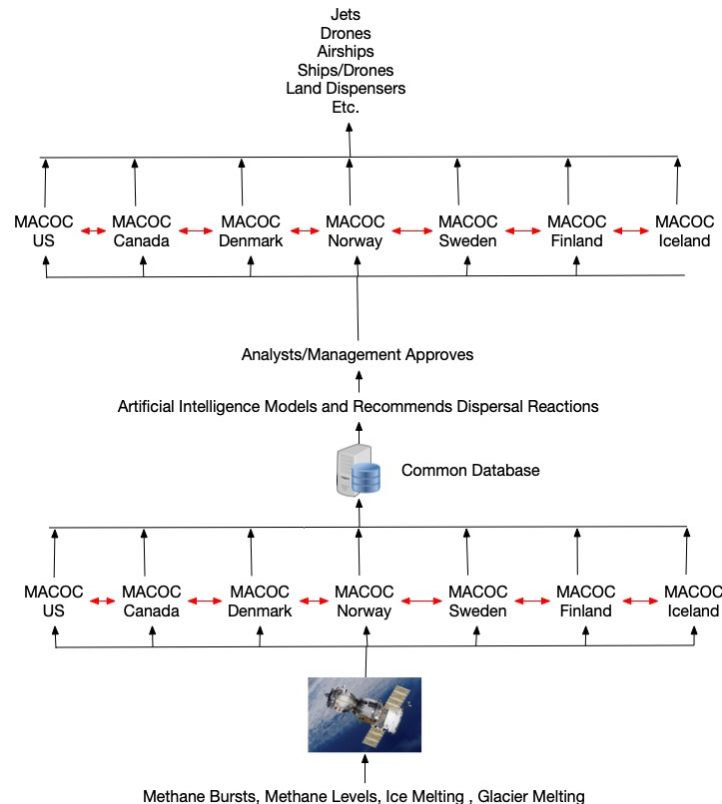
From Which Artificial Intelligence (AI) Models

- AI then assesses the data looking for methane bursts, ice melts, etc.
- It then assesses the risk, matching the most cost-effective, safe, response
- It then produces continual recommendations to analysts & management which are approved



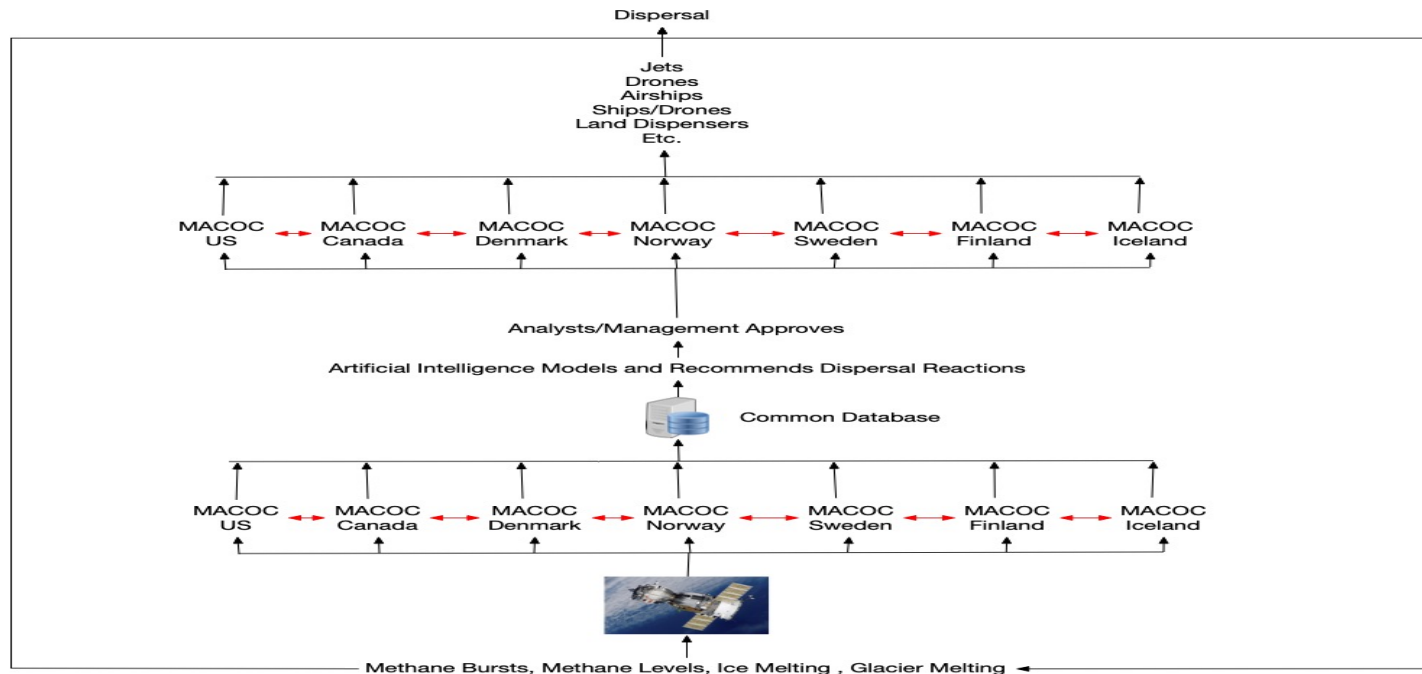
Leads to an Integrated Response Across Countries

- Each jurisdiction issues dispersal commands to jurisdictional dispersal delivery assets, but they're all tightly inter-coordinated



The System Keeps Monitoring

- Each dispersal is monitored for its effectiveness
- If there isn't the correct result
- The cycle repeats until the desired results are achieved



End to End Security Is Required

- Here's the challenge with the proposals
- Malicious Inc's and malicious countries may want to attack the system
- Thus, from the beginning, both physically and digitally, security needs to be built into the system
- It must work from:
 - Physical devices used
 - The communication systems used
 - Operation centers with staff access
 - etc.
- **Which is why the proposals call out for end-to-end security**

Data and Security is Essential To Successful Operations!

- Without an integrated, secure, data/operations system, which works across the jurisdictions, then it isn't possible to successfully deploy:
 - MEWRS
 - HMLP
 - AICS
 - GCS
- **That's what this architecture successfully delivers to governments**

Appendix - Contacts

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