



## Using MODIS data in winter navigation

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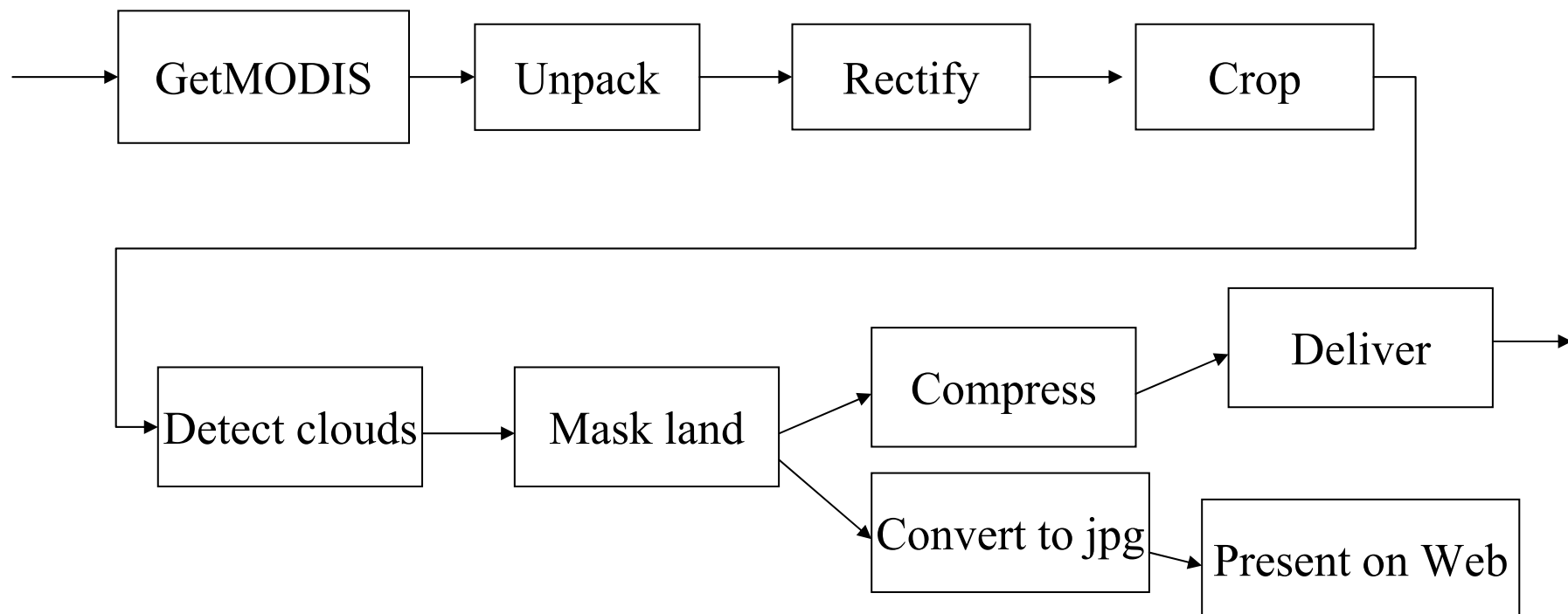
## Objective of the Maritime Application

- To develop a prototype application for maritime users that is built on the framework components. The focus is to minimize the amount of data to be delivered still providing the users with relevant data (satellite images, weather prognosis) for ship route planning support.
- Near-real-time aspect important
- Integration of new data sources a test case for the application design -> use of MODIS data

## MODIS

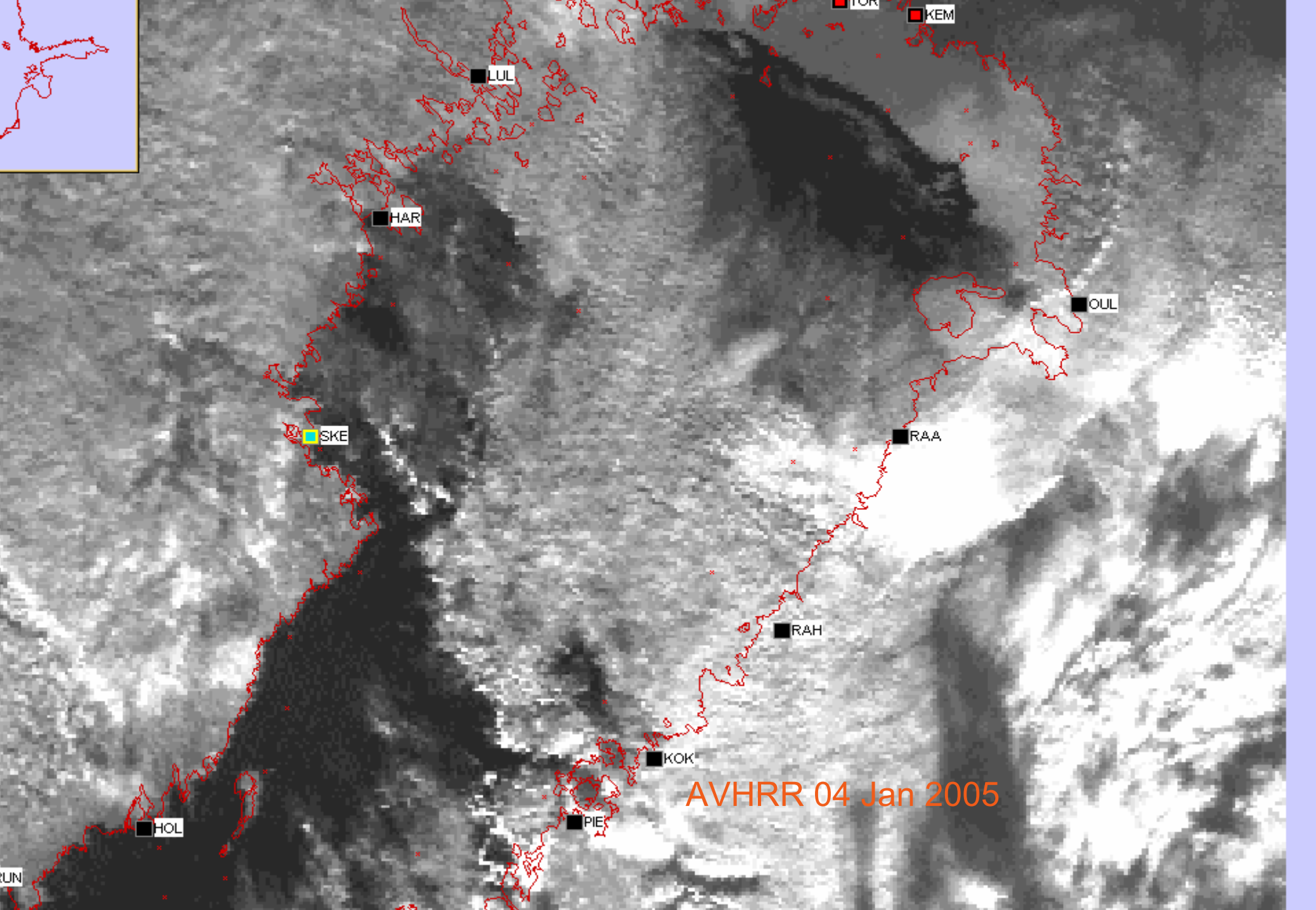
- An instrument on three polar orbiting satellites: Aqua, Terra and Aura
- 250 m resolution VIS (620 -670 nm) and nIR (841-876 nm) channels available, other wavelengths also available, but with coarser resolution.
- Direct broadcast mode reception via FMI, Sodankylä receiving station. (Terra and Aura, Aqua more seldom)
- Processing delay 1.5 to 2 hours after overflight -> usable for Near real time applications.
- data freely available, FMI charges a processing and transfer fee (amount matter of negotiations).
- usefulness restricted by clouds (as with AVHRR). Many overflights per day enables use of even partly cloudfree images.

## Processing chain

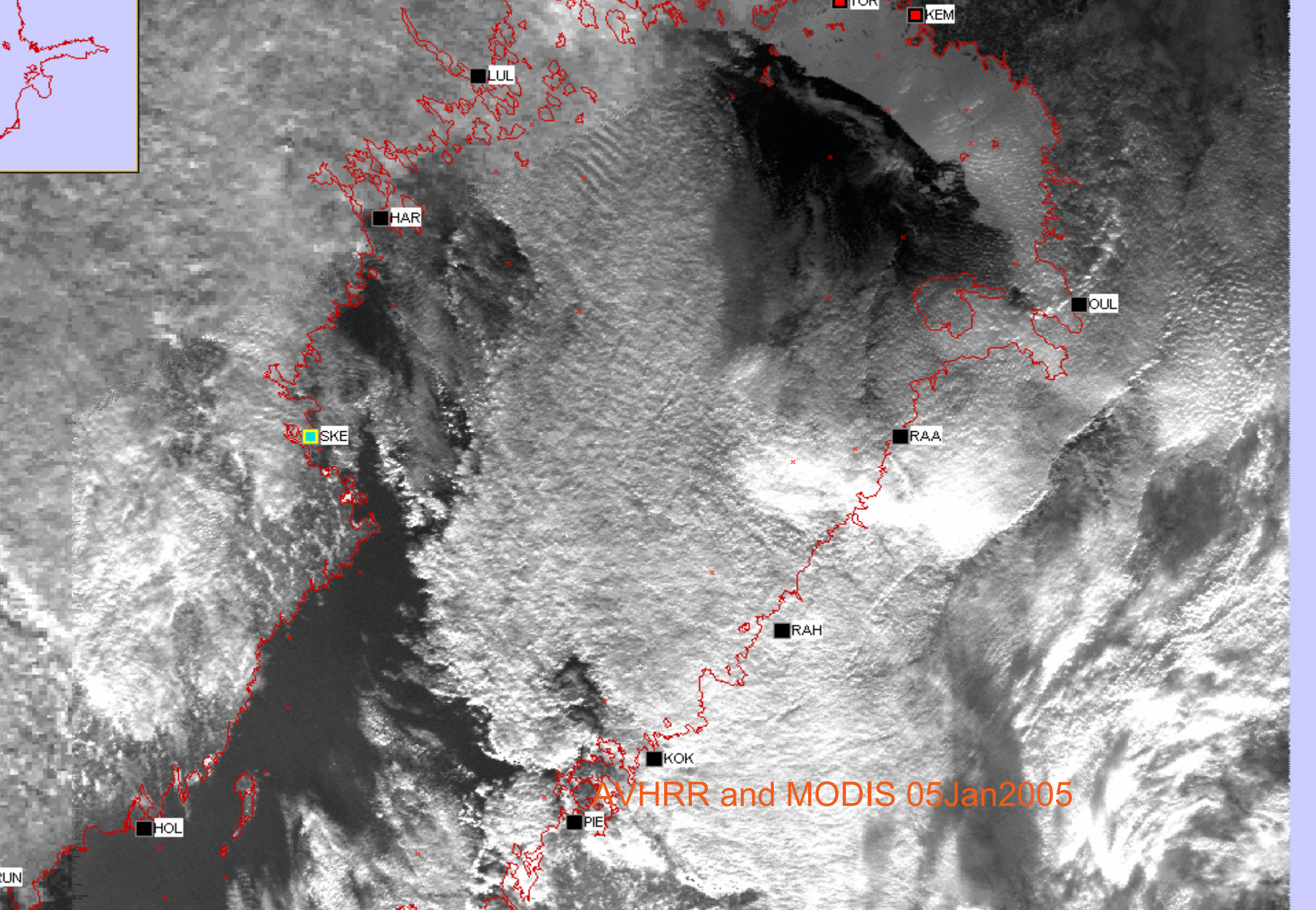


## MODIS image examples

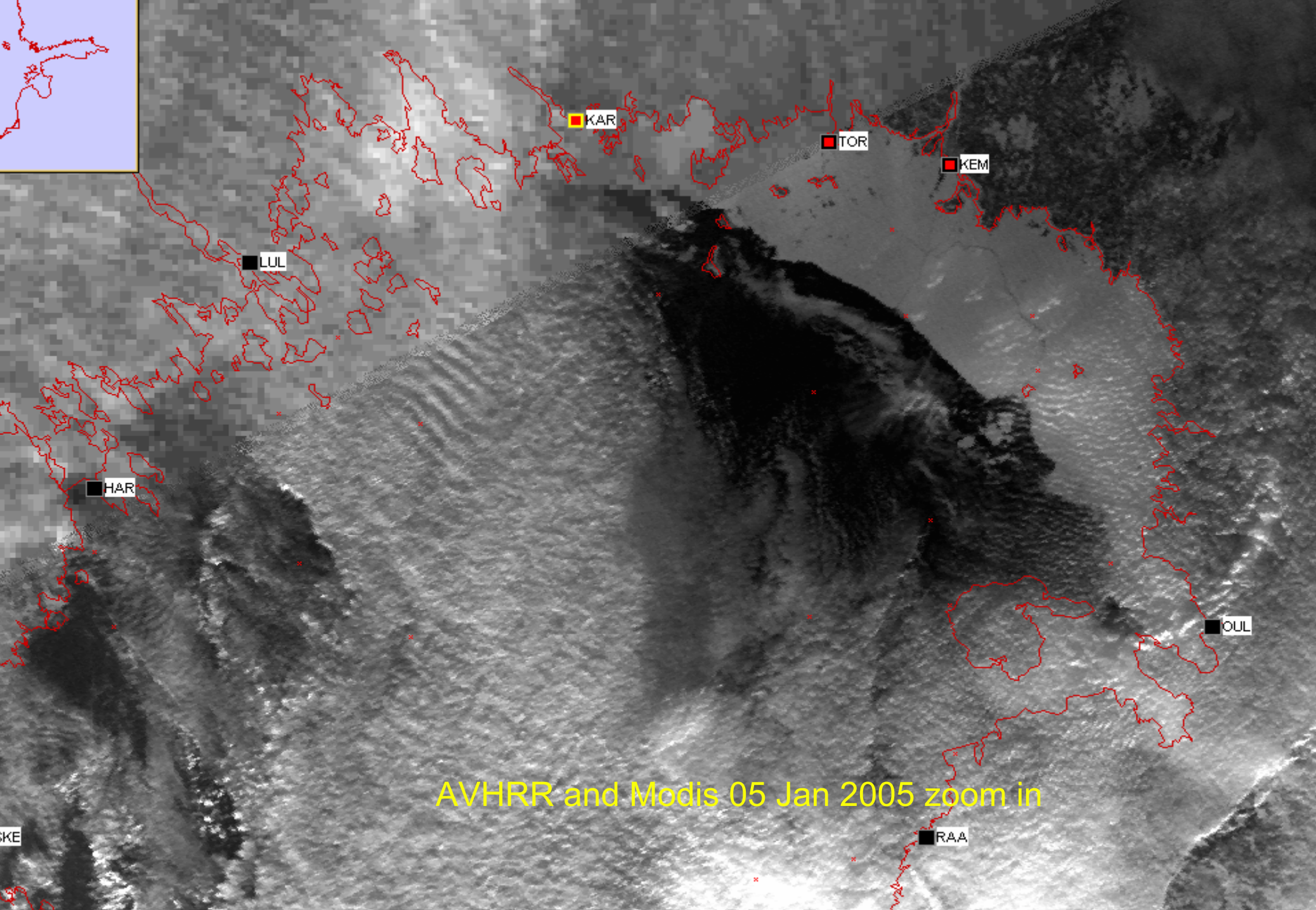
- Examples from beginning of this year.



AVHRR 04 Jan 2005



AVHRR and MODIS 05Jan2005



KAR

TOR

KEM

LUL

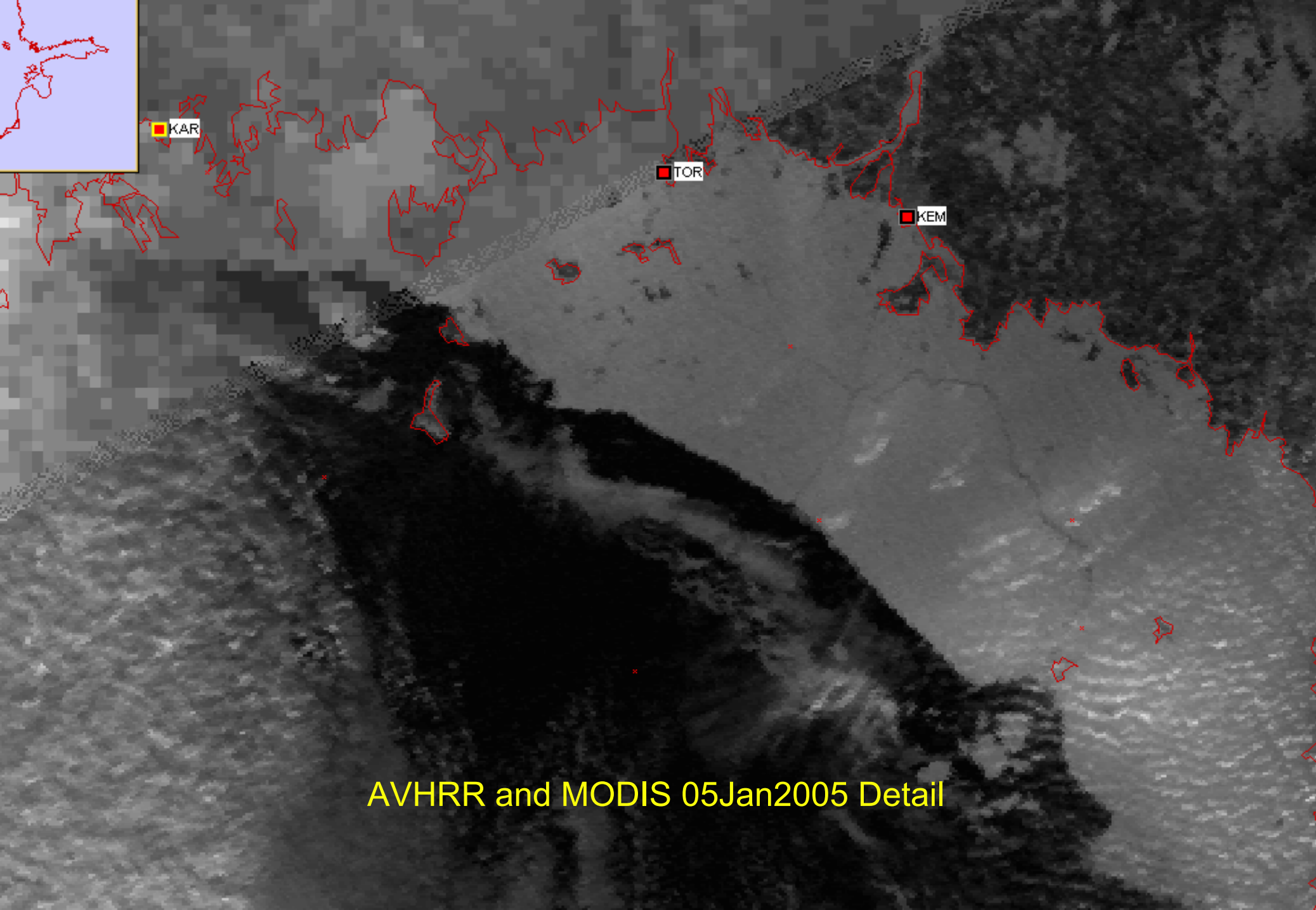
HAR

OUL

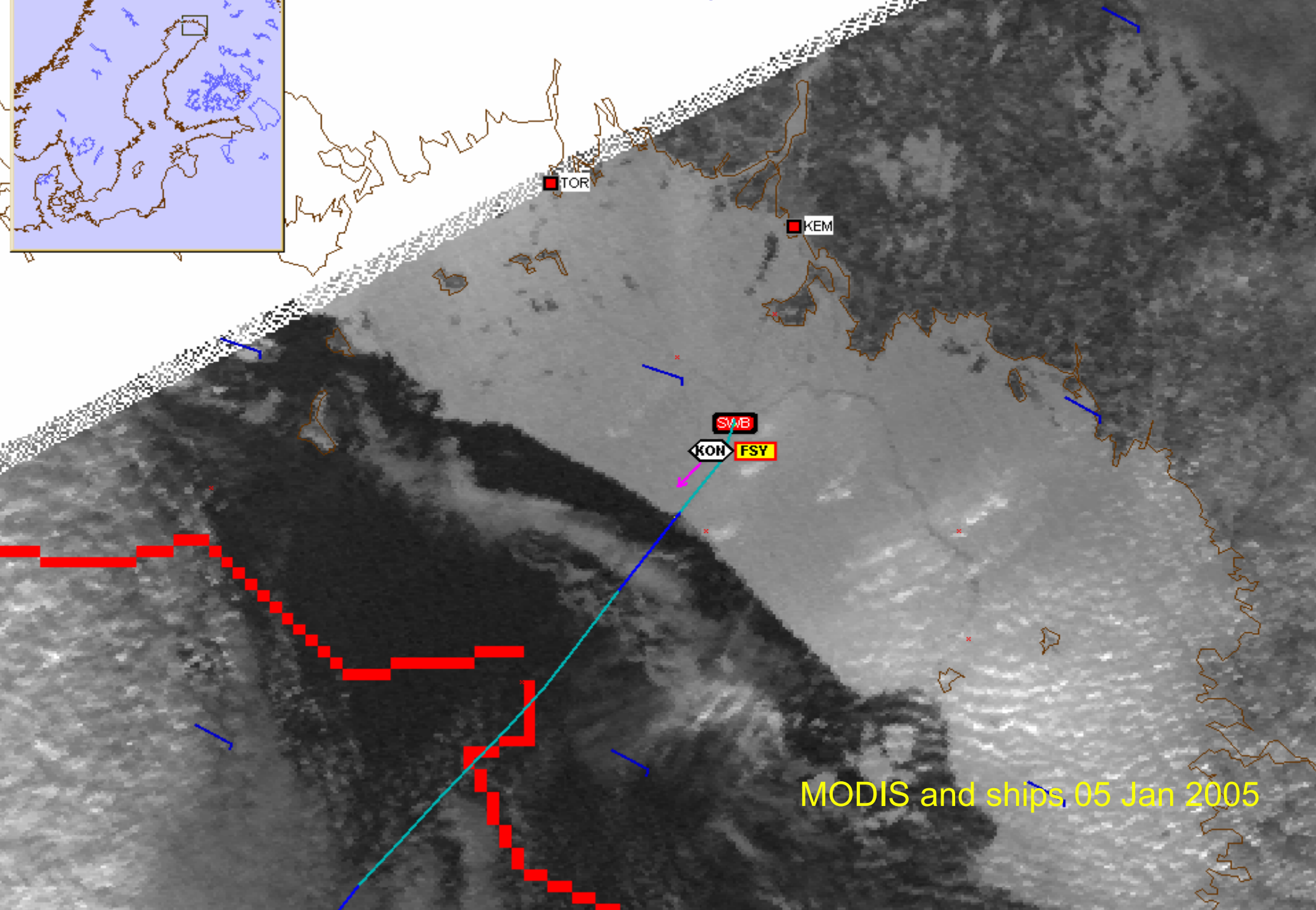
AVHRR and Modis 05 Jan 2005 zoom in

RAA

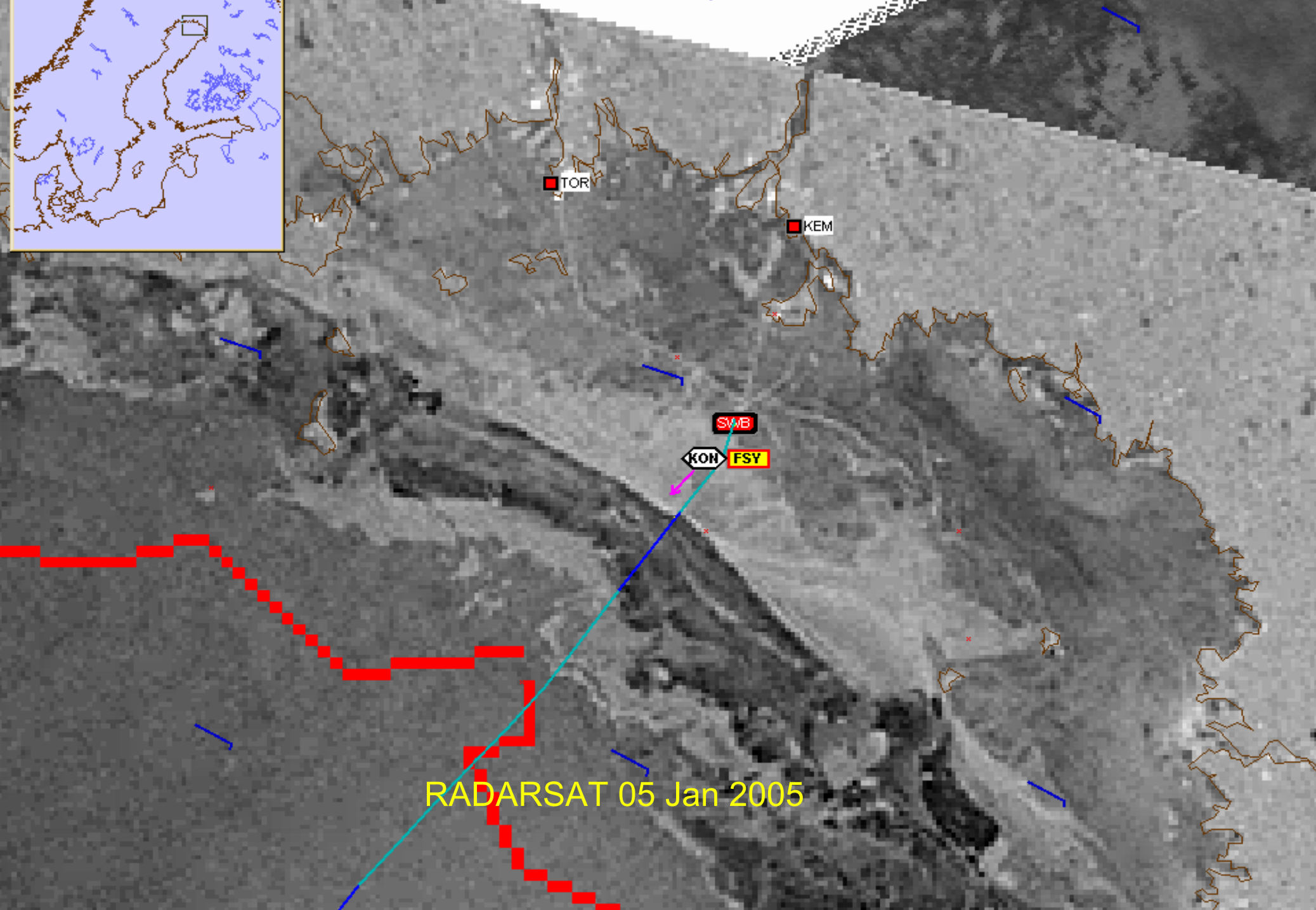
SKE



AVHRR and MODIS 05Jan2005 Detail



MODIS and ships, 05 Jan 2005



## Relevance to ENVIMON

- The processing chain will (eventually) include (at least) two different inputs: NOAA AVHRR and MODIS. The modularity of the application will then be more distinct.
- Version 2 of the application will use Framework components
- The delta to include the application as part of the Ice Service production chain is relatively small – the Ice Service will evaluate the results.