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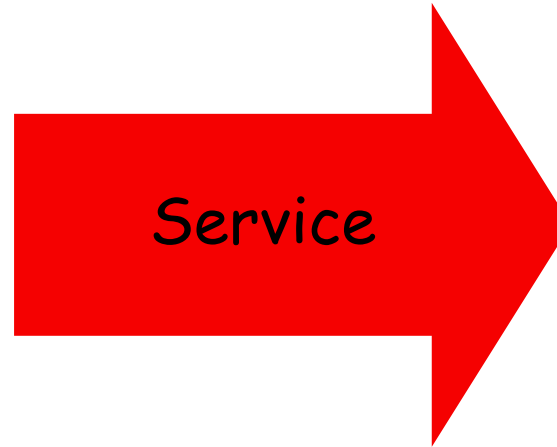
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Bridging the Gap



Satellite Image



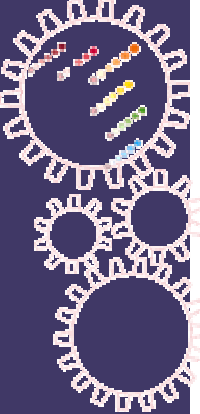
Information Need

1. Data Users Element

Demonstration of EO-based service to end-users

2. GMES Services Element

Implementation of operational EO-based services



DUE Project: TEMIS

(Claus Zehner)



Tropospheric Emission Monitoring Internet Service

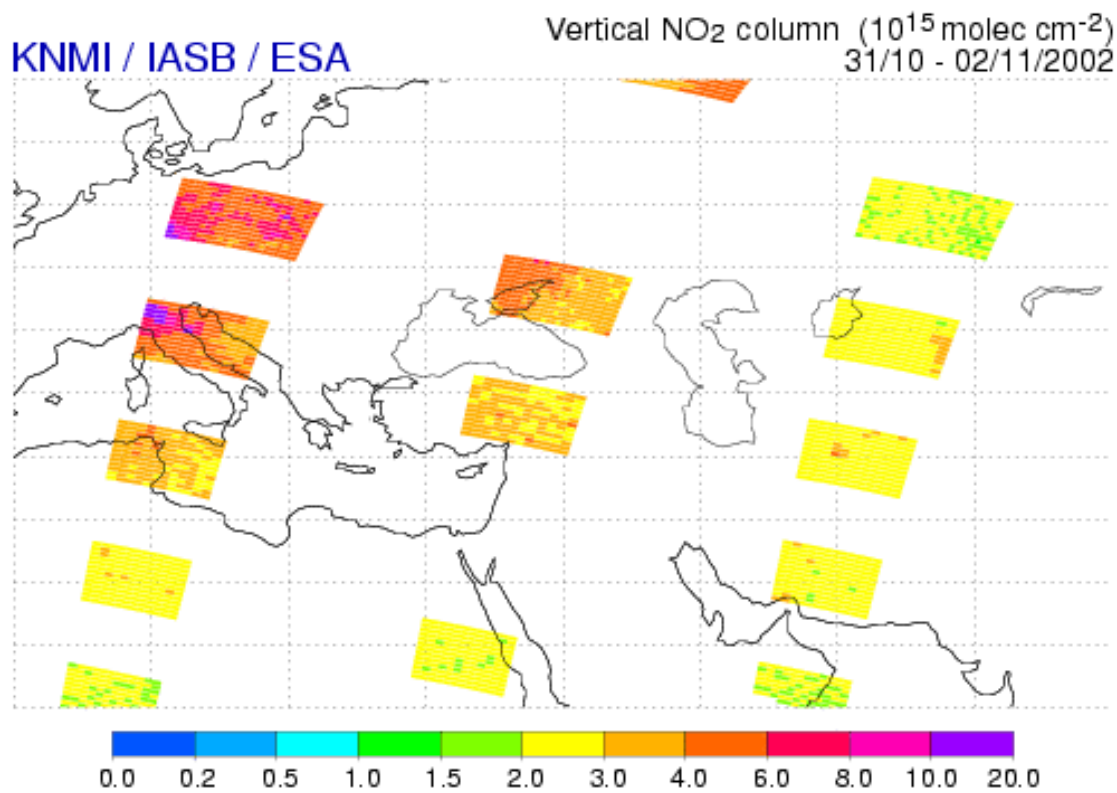
Products:

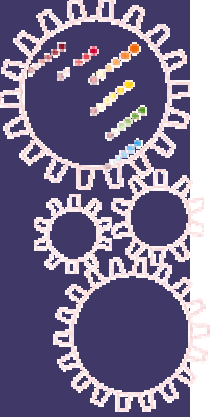
- Trace gases: O₃, NO₂, HCHO, CH₄, CO, SO₂, BrO, water vapour
- Aerosols: Europe (ATSR) and Global (GOME and SCIAMACHY)

URL: <http://www.temis.nl>

Schedule: Sep 2002 - Aug 2004

SCIAMACHY





GMES Project: PROMOTE

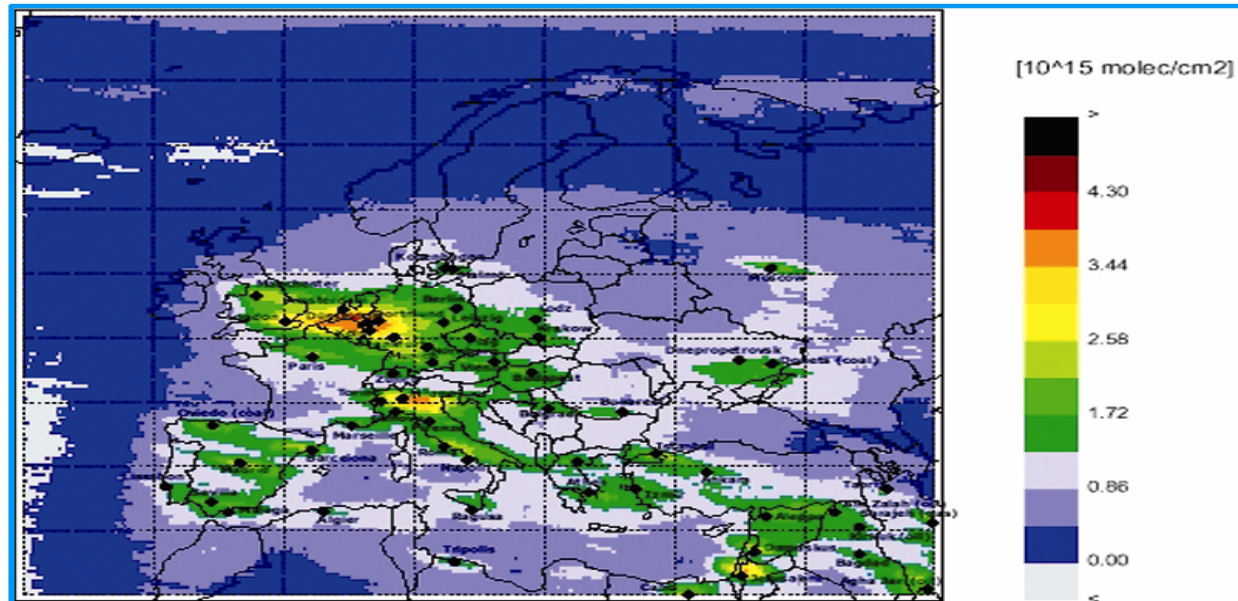
(Claus Zehner)

Overview of Services

1. **Stratospheric Ozone**; **operational** monitoring and forecast service
Users: WMO, ECMWF, Météo France
2. **UV Exposure**; **operational** monitoring and forecast service
Users: RIVM, SKYE, l'Oreal, BVDD, Ambre-Solaire, ARPA, Météo France
3. **Air Pollution**; **demonstration** monitoring and forecast service based on data sets produced in the DUP TEMIS and FP5 DAEDALUS/CREATE projects.
Users: EMEP, JRC/IES, EMPA, ADEME/INERIS, LUA/NRW, ARPA, EPA, UBA-A, Greater London
4. **Greenhouse Gases**; **definition** of concentration and emission monitoring services
Users: JRC/IES, EMEP, EPA, UBA-A

Status

KO - 1 April 2004.



○ European NO₂ hot spot regions as measured from GOME in summer 2000 and 2001.

DUE Project: CONTRAILS

User: EUROCONTROL
(European Organisation for the Safety of Air Navigation)

Applications:

- Aviation induced climate change: direct effect of contrails and contrail cirrus
- Investigation of mitigation strategies
- Development of contrail formation model

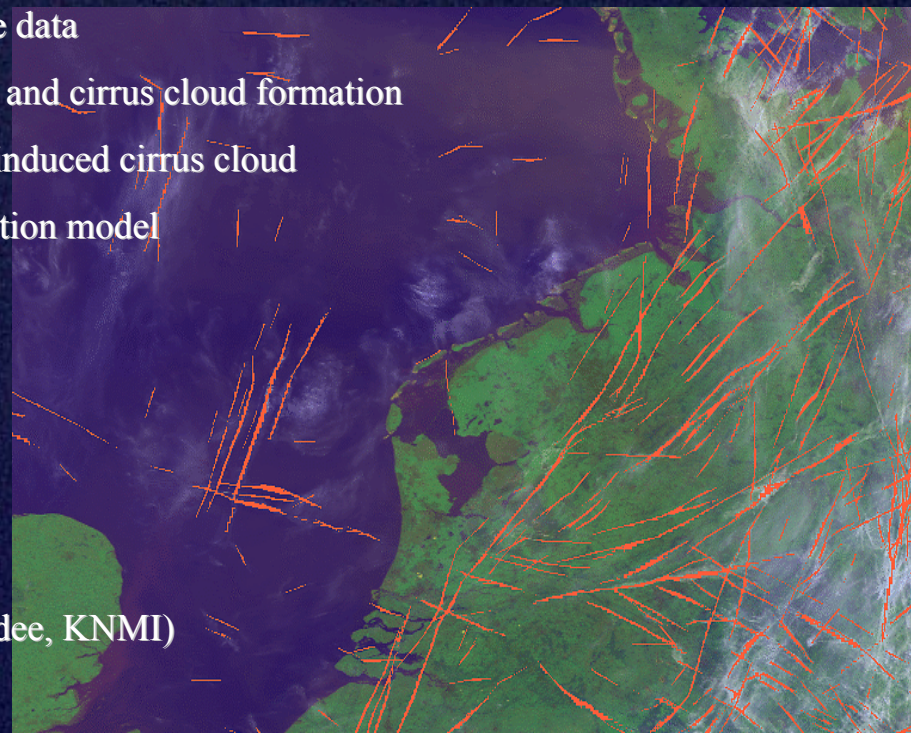
Products/Activities:

- Contrails mapped over Europe and N Atlantic 1985, 1990, 1995, 2000, 2004
- Validation against higher-resolution satellite data
- Quantify correlation between aircraft traffic and cirrus cloud formation
- Greenhouse effect of contrails and contrail-induced cirrus cloud
- Cal/val of EUROCONTROL contrail formation model

Input:

- ATSR, AATSR, AVHRR, MSG
- Air traffic density information
- Meteorological fields for contrail prediction

Status: Project KO on 1 Dec 2003 (DLR, Dundee, KNMI)



DUE Project:

Users

- Atmospheric modelling community (ECMWF, MétéoFrance, MPI Hamburg)
- Transboundary pollution monitoring (EMEP)
- Regional air quality monitoring agencies (Athens, Lombardia, Flanders, NRW)

Inputs:

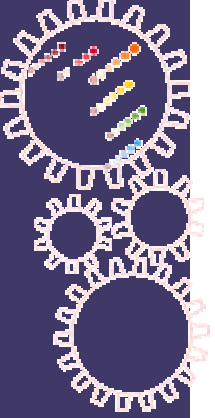
- Fusion of at minimum ATSR, AATSR, and MERIS for high resolution and best cloud clearing
- AERONET, EARLINET, WMO/GAW Background Air Pollution Monitoring Network, *etc.*, for validation

Products/Activities

- Global aerosol data set (1995 - 2005)
 - ✓ Land and Ocean at 10 km resolution
 - ✓ AOD, Ångström exponent
 - ✓ Speciation: soot, mineral, marine, *etc.*
- Validation against ground based photometers and lidar
- Intercomparison with other satellite based aerosol data sets
- Assimilation into models and intercomparison exercise
- CTM intercomparison

Invitation to tender: Issued March 2004, KO scheduled in June 2004

Budget: Approx. € 1 000 000



Thanks !!

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