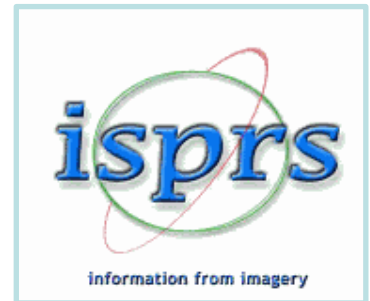


SDG's and the role of Earth Observation

Christian Heipke

IPI - Institute for Photogrammetry
and GeoInformation
Leibniz Universität Hannover
Germany

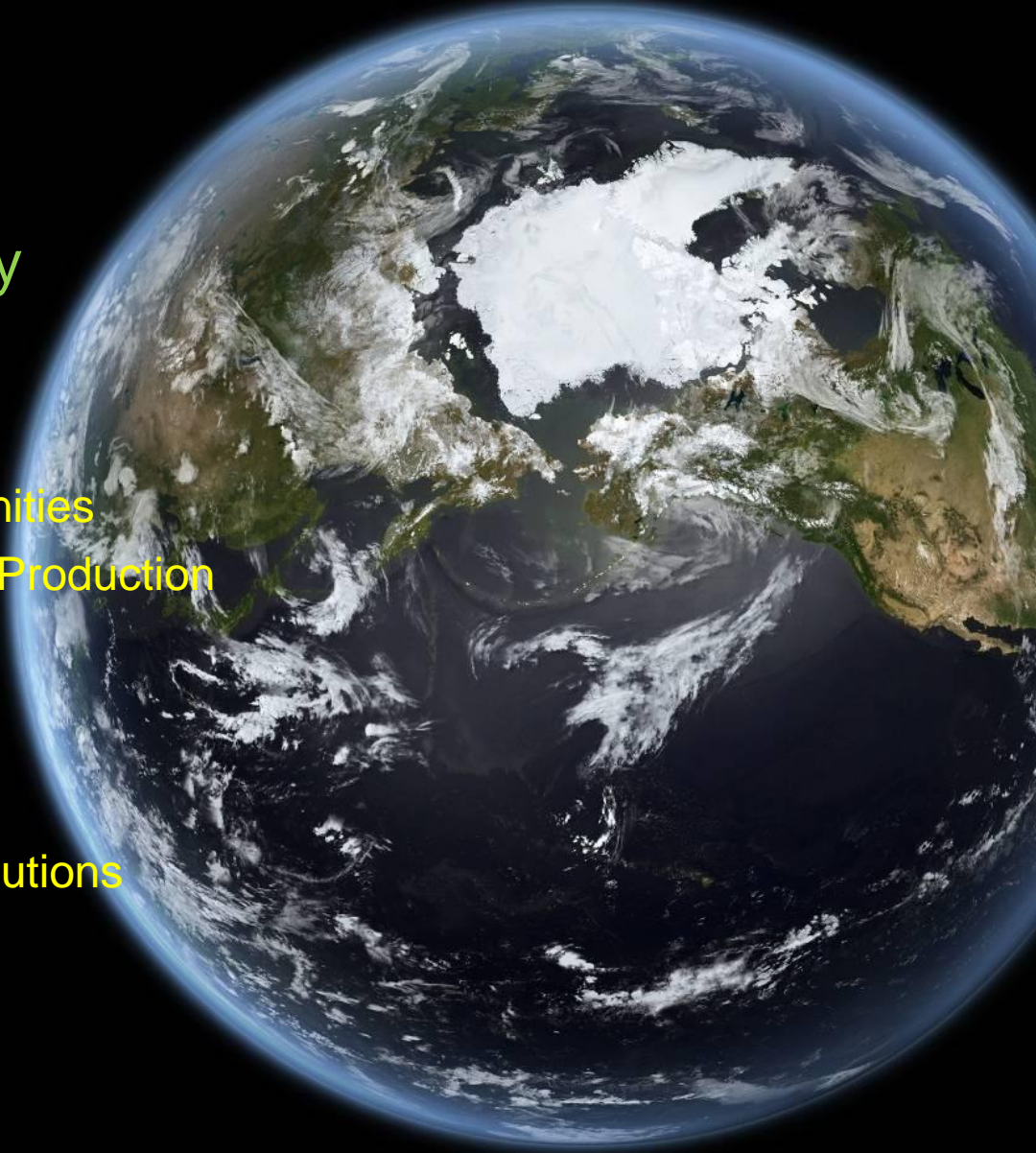


Secretary General, **ISPRS**

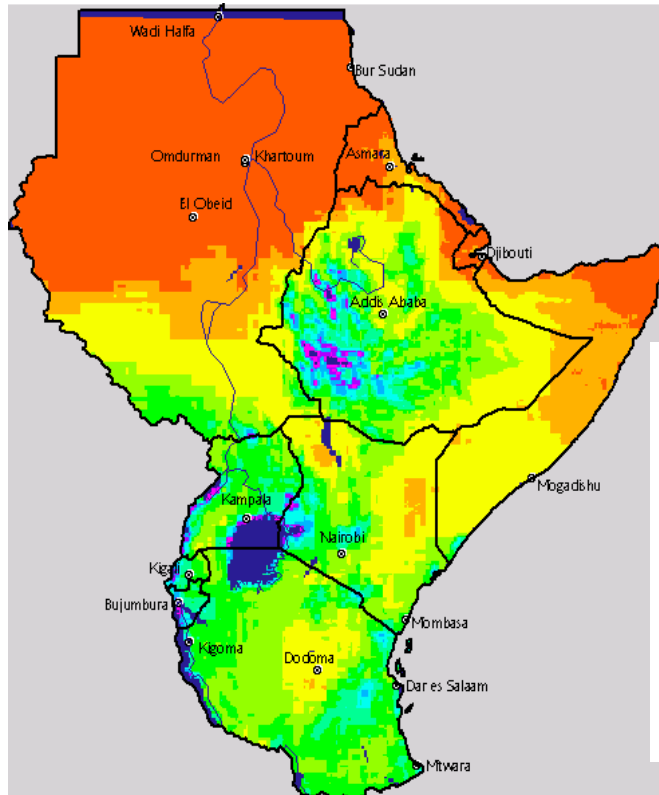


SDG's: where Earth Observation can help

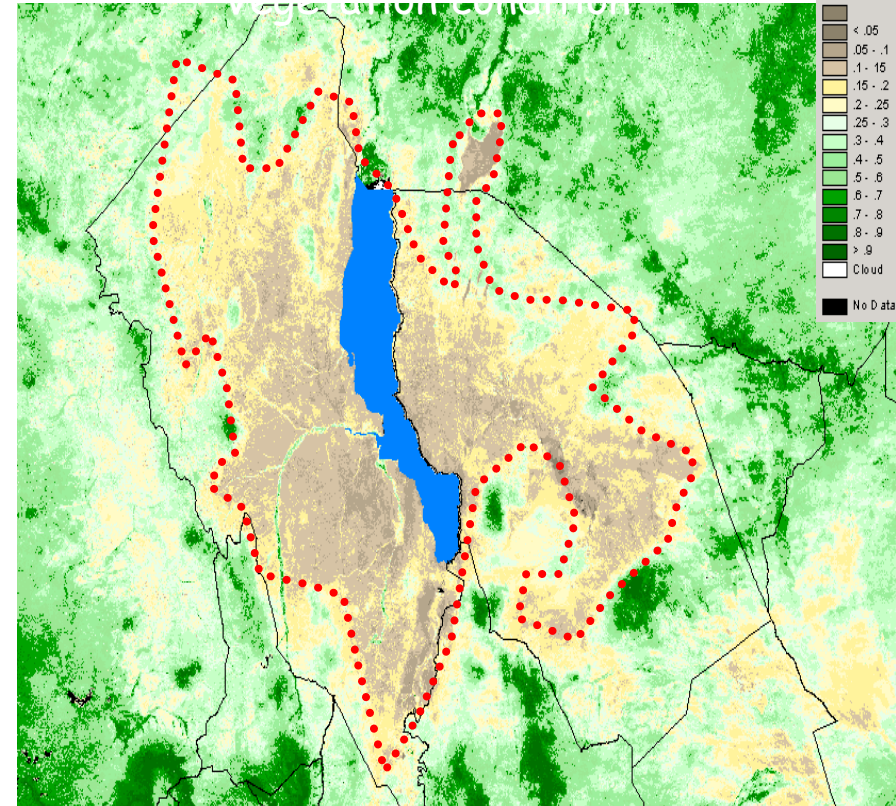
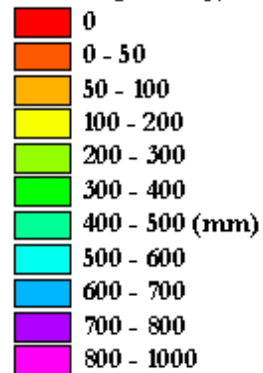
1. No Poverty
2. Zero Hunger
3. Good Health and Well-Being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnership for the Goals



Satellite based rainfall and crop yield forecast



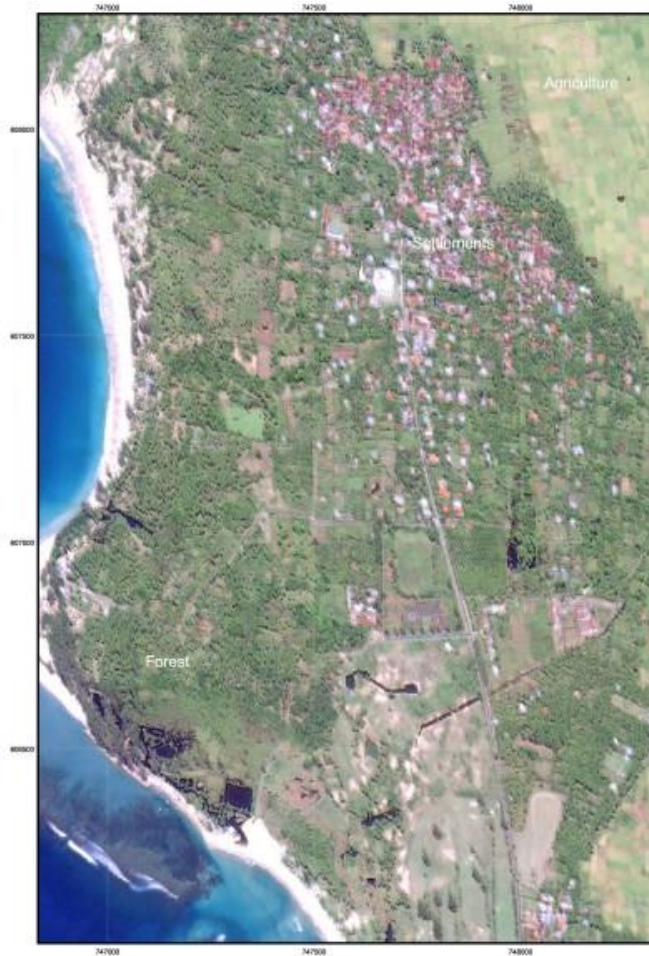
March-April-May, 2003



Natural disaster: Banda Aceh

Indonesia - Banda Aceh Subset 3

IKONOS - January 10, 2003 - PRE-DISASTER IMAGE



1 : 5000

IKONOS - December 29, 2004 - POST-DISASTER IMAGE



Center for Satellite based
Crisis Information
Emergency Mapping & Disaster Monitoring

German Remote Sensing Data Center
German Aerospace Establishment

DLR

Interpretation

The map shows an area north of the village of Lingsa on the northwestern coast of Sumatra (Indonesia) before and after the devastating Tsunami flood waves, which struck many countries in the Indian Ocean on December 26, 2004. The IKONOS images were taken on January 10, 2003 and December 29, 2004, respectively. The region of Banda Aceh is one of most severely damaged areas. The Tsunami washed up to two kilometers inland and destroyed major parts of the coastal plain, including settlements, forests and farmland.

Scale

0 100 200 300 400 500 m

1 : 5000

Projection: UTM Zone 48 N
Datum: WGS 84
Spheroid: WGS 84

Data Source

IKONOS imagery provided through:
Centre for Remote Imaging,
Sensing and Processing (CRISP)

SPACE
IMAGING
Earth Information. From Space.

Map created December 26, 2004 by zhiguo.liu



Refugee camp, Al Zaatari, Jordan
08.03.2011



Refugee camp, Al Zaatari, Jordan
12.12.2012



Refugee camp, Al Zaatari, Jordan
26.02.2013

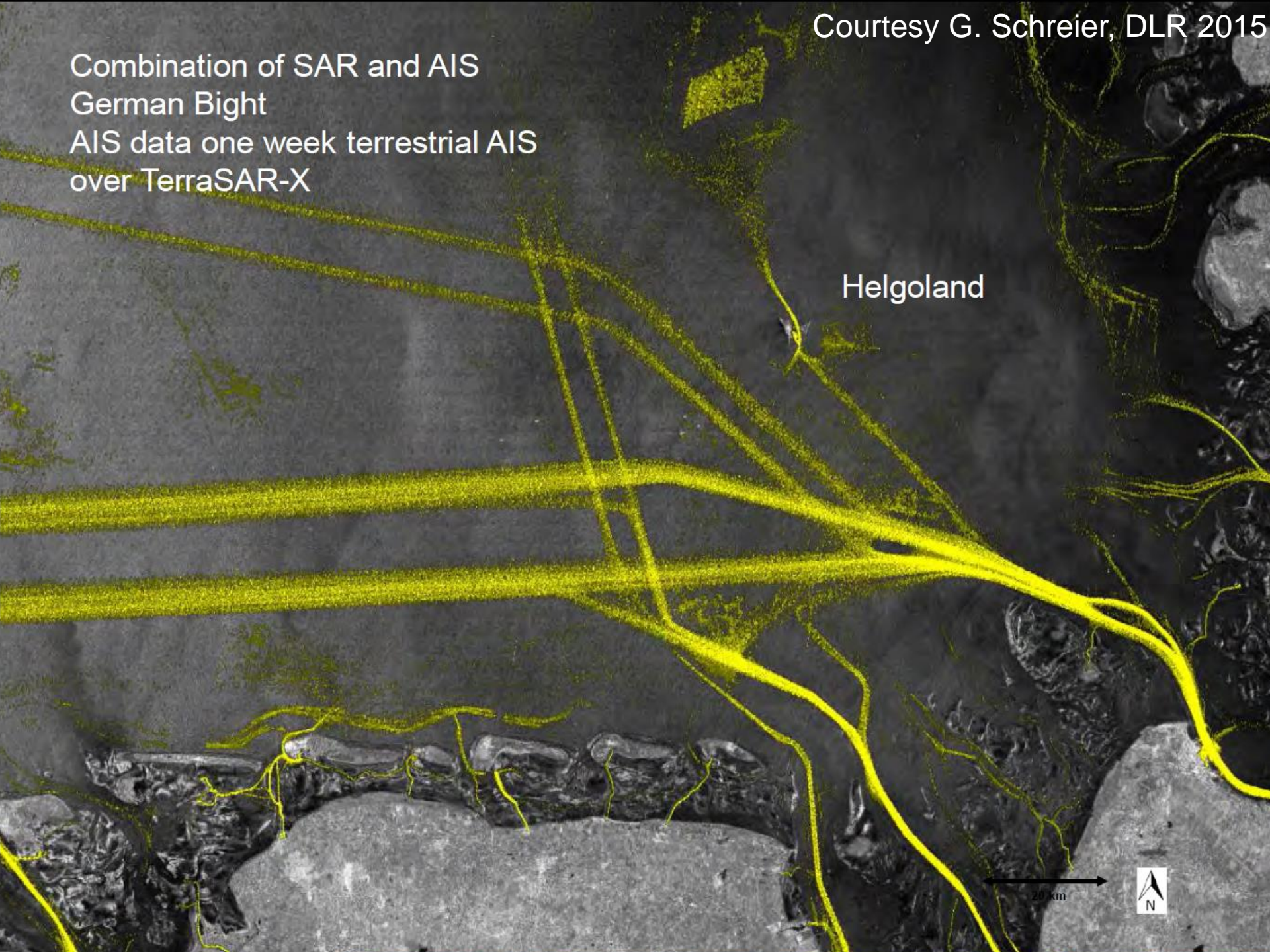
0 500 m



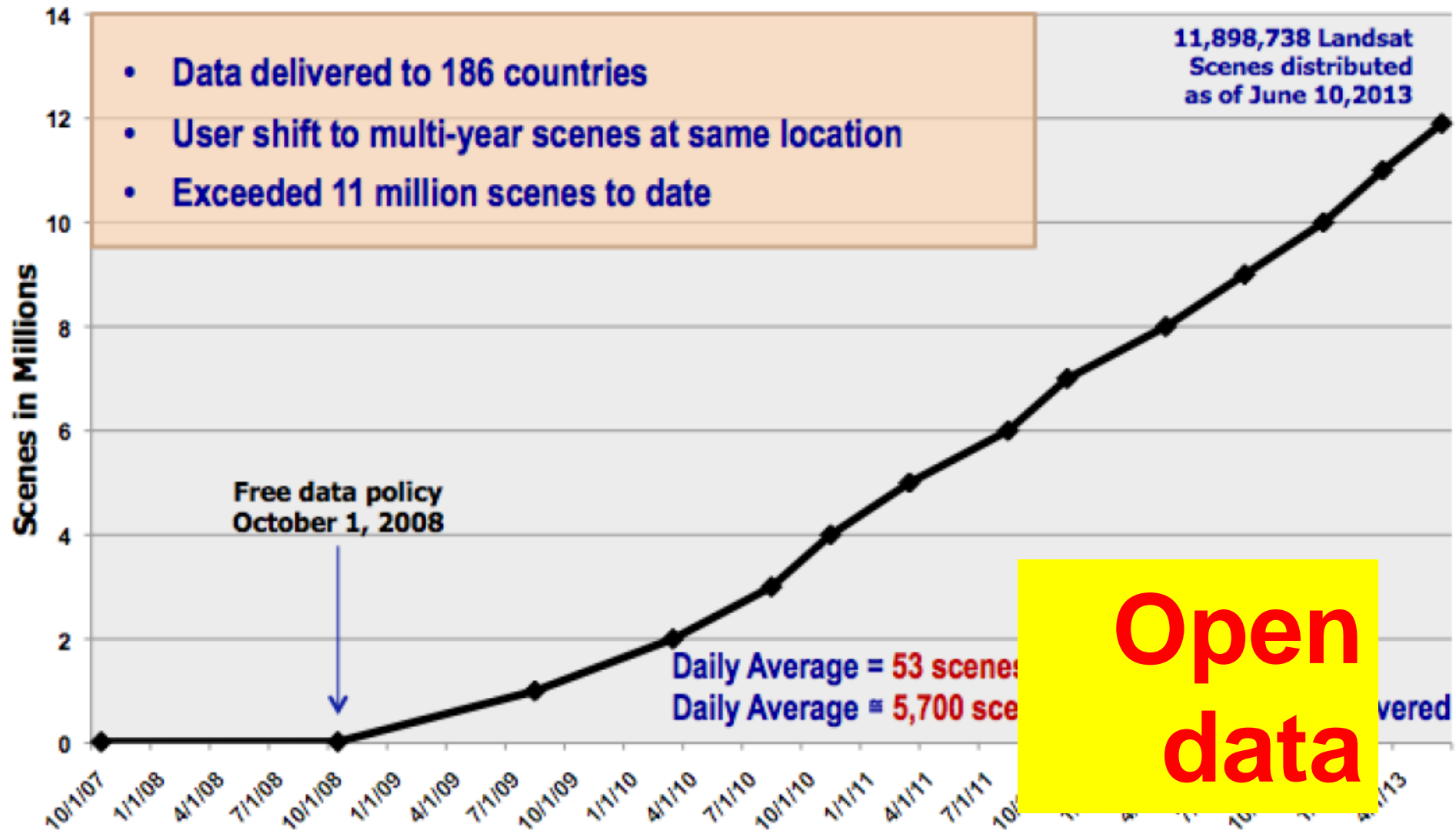
Refugee camp Al Zaatari, Jordan
13.01.2014

Combination of SAR and AIS
German Bight
AIS data one week terrestrial AIS
over TerraSAR-X

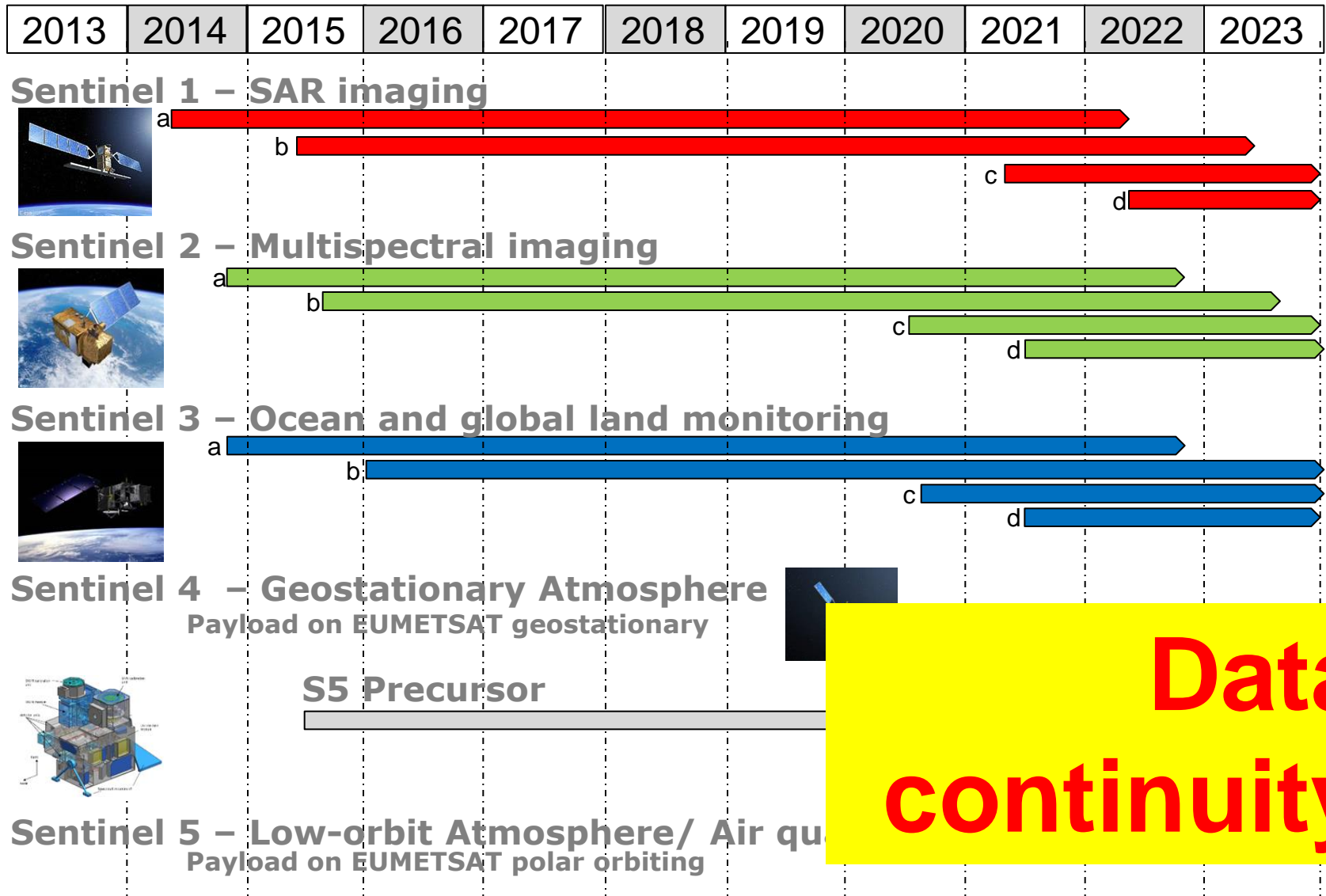
Helgoland



Increasing Demand for Free Landsat Data



European contribution: Sentinels



**Data
continuity**

Space programmes and EO satellites

Space programme have been established in many different countries, some based on multi-national cooperation

Austria
Australia
Brazil
Canada
Chile
China
Czech Rep.
Europe
France
Germany
Hungary
India
Indonesia
Iran

Iraq
Israel
Italy
Japan
Kazakhstan
Luxembourg
Malaysia
Mexico
Multi-national
North Korea
Norway
Pakistan
Philippines
Portugal

Russia
Saudi Arabia
Singapore
S. Korea
Spain
Sweden
Taiwan
Thailand
Turkey
UAE
UK
Ukraine
USA
...



**International
topic**



International Charter on Space and Major Disasters

Courtesy G. Schreier, DLR 2015



An International agreement among participating Space Agencies to provide space based data and

Worldwide cooperation

Third UN World Conference on Disaster Risk Reduction - Sendai, March '15

- **Priority 1: Understanding disaster risk**
 - National and local levels
 - 24. To achieve this, it is important:
 - (c) To develop, periodically update and disseminate, as appropriate, location-based disaster risk information, including risk maps, to decision makers, the general public and communities at risk of exposure to disaster in an appropriate format by using, as applicable, **geospatial information technology**;
 - Global and regional levels
 - 25. To achieve this, it is important
 - c) To promote and enhance, through international cooperation, including technology transfer, access to and the sharing and use of non-sensitive data and information, as appropriate, communications and **geospatial and space-based technologies** and related services; maintain and strengthen in situ and **remotely-sensed earth and climate observations**; and strengthen the utilization of media, including social media, traditional media, big data and other measures for successful disaster risk reduction in accordance with national laws;

... on the
political agenda



Conclusions

- Earth observation - indispensable tool to reach SGD's
 - Towards daily and **real-time monitoring** of every corner of the globe
 - Land, water, ice, atmosphere
 - Moving objects (people, actions, traffic)
 - Increasingly **global cooperation**, open data policy (GEO)
 - **Operational services** are being developed – **data continuity**
 - Geospatial **data infrastructure** for quick access and automatic interpretation
 - **Research, education and outreach** to better serve the global population



The International Society for Photogrammetry and Remote Sensing (ISPRS)

- an international NGO with a focus on
 - **science and development**
 - in photogrammetry, remote sensing, spatial information
 - **cooperation** between **all relevant stakeholders**
 - academia, private industry, government, end users
 - truly **global** cooperation
 - **education**, technology transfer, capacity building
- more than 100 years old

ISPRS Congress, Prague, July 12-19, 2016

approx. 3.000 experts from around the world

ISPRS – UN-GGIM **National Mapping and Cadastre Agency** Forum +

ISPRS – IAA **Space Agency** Forum



**ISPRS – UN-GGIM National Mapping
and Cadastral Agency Forum**
14 – 15 July 2016

An integral part of the XXIII ISPRS Congress in Prague



ISPRS – IAA Space Agency Forum
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