

FUSION User Workshop

FUSION

High Resolution Land Monitoring
by Fusion of Optical and Infrared Data

Welcome to the User Workshop

Funded by the Federal Republic of Germany, funding body: Space Agency of the German Aerospace Center (DLR, Deutsches Zentrum für Luft- und Raumfahrt e.V.) with funds provided by the Federal Ministry of Economics and

Technology acting on a mandate from the German Federal Government

(Deutscher Bundestag) under the reference number 50 EE 0929.



Deutsches Zentrum
für Luft- und Raumfahrt e.V.



Bundesministerium
für Wirtschaft
und Technologie



FUSION User Workshop

Introduction to the FUSION Project

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Project Background and Idea

BIRD (started 2001) mission delivered extraordinary success

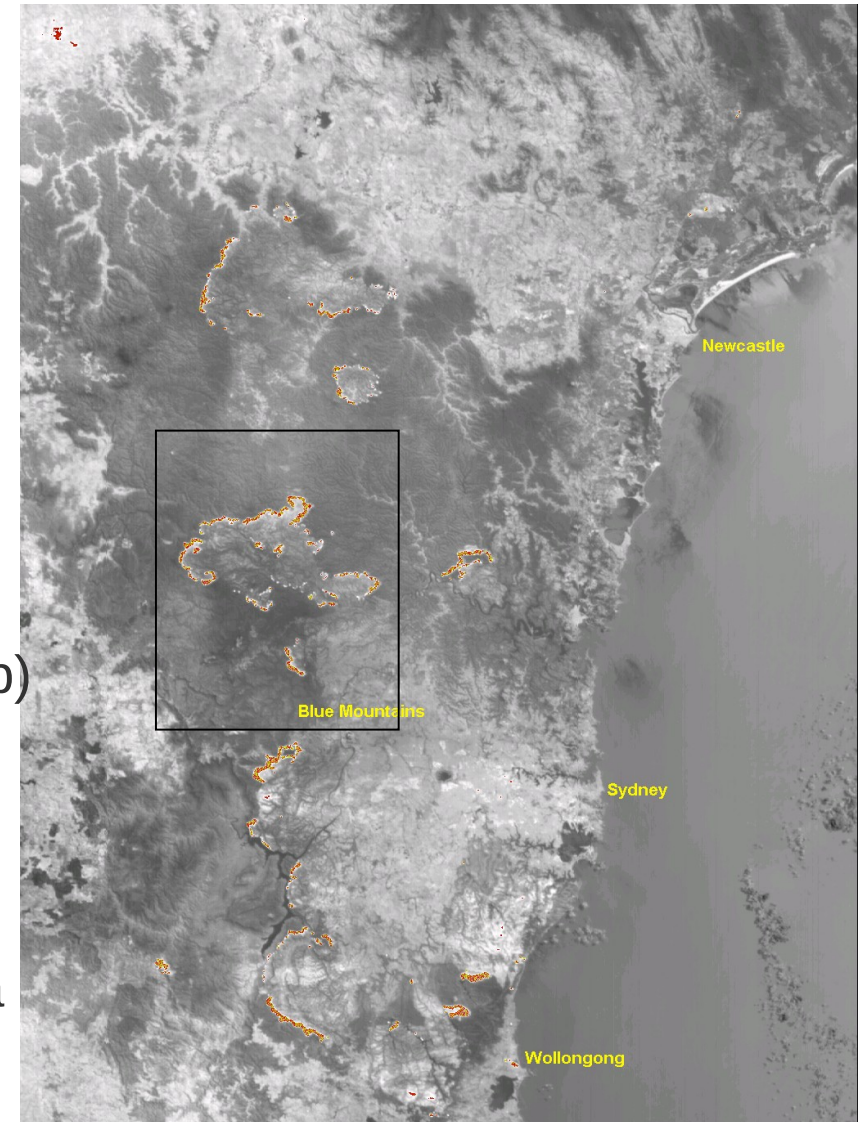
Combination of two infrared channels (MIR/TIR) and a VIS/NIR sensor will be of great interest also in the future

Application of Dozier method and Multi-Sensor Multi-Resolution technique significantly improves geometric resolution

For certain tasks on-board processing of sensor data to high-level products (Level 1b) possible

RapidEye: German company commercially generating and refining EO data

For commercial exploitation of infrared data cooperation with data refining company suggestive



4.Jan.2002 10:08 local time, BIRD-image, MIR-channel, Fire colour coded

FUSION User Workshop,
19 May 2010

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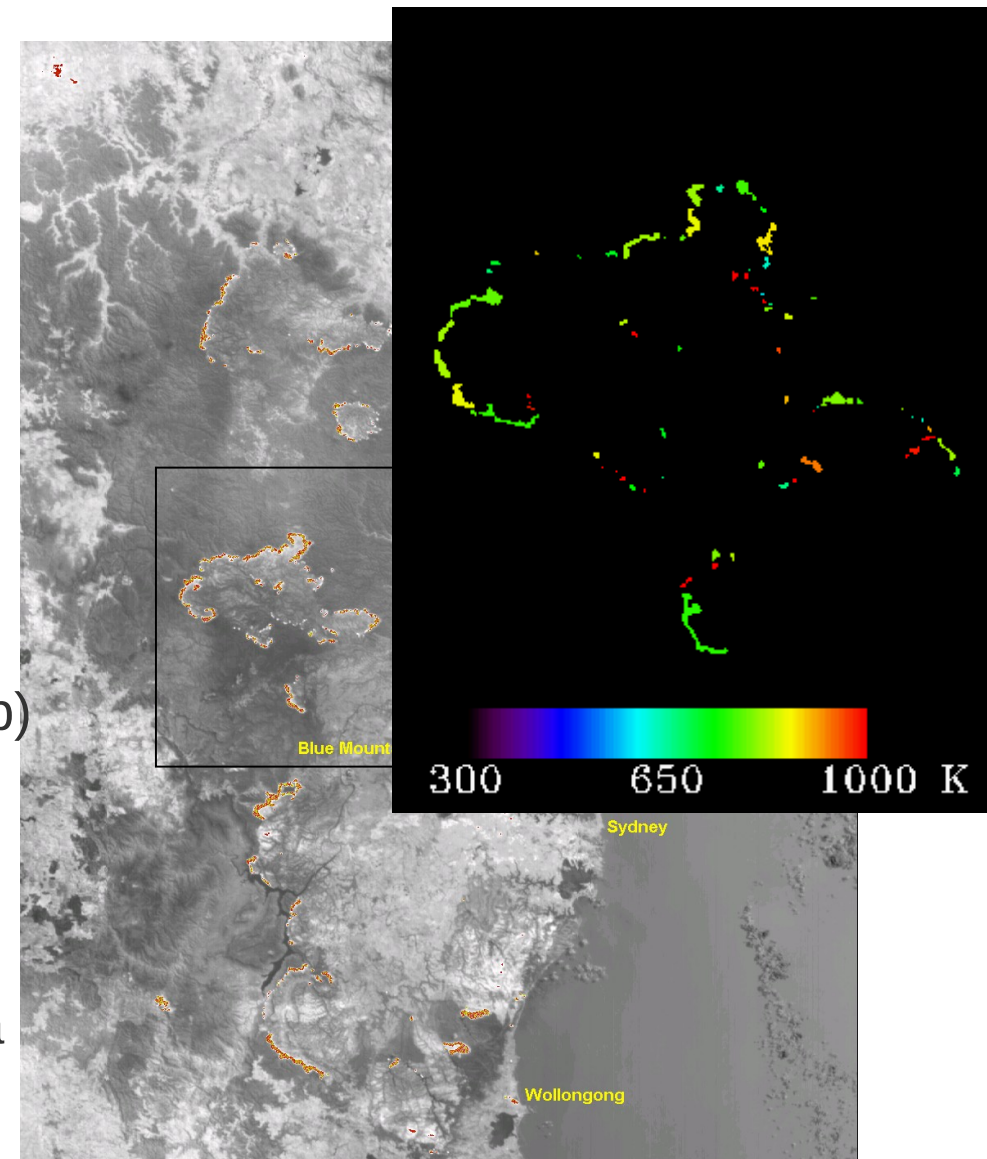
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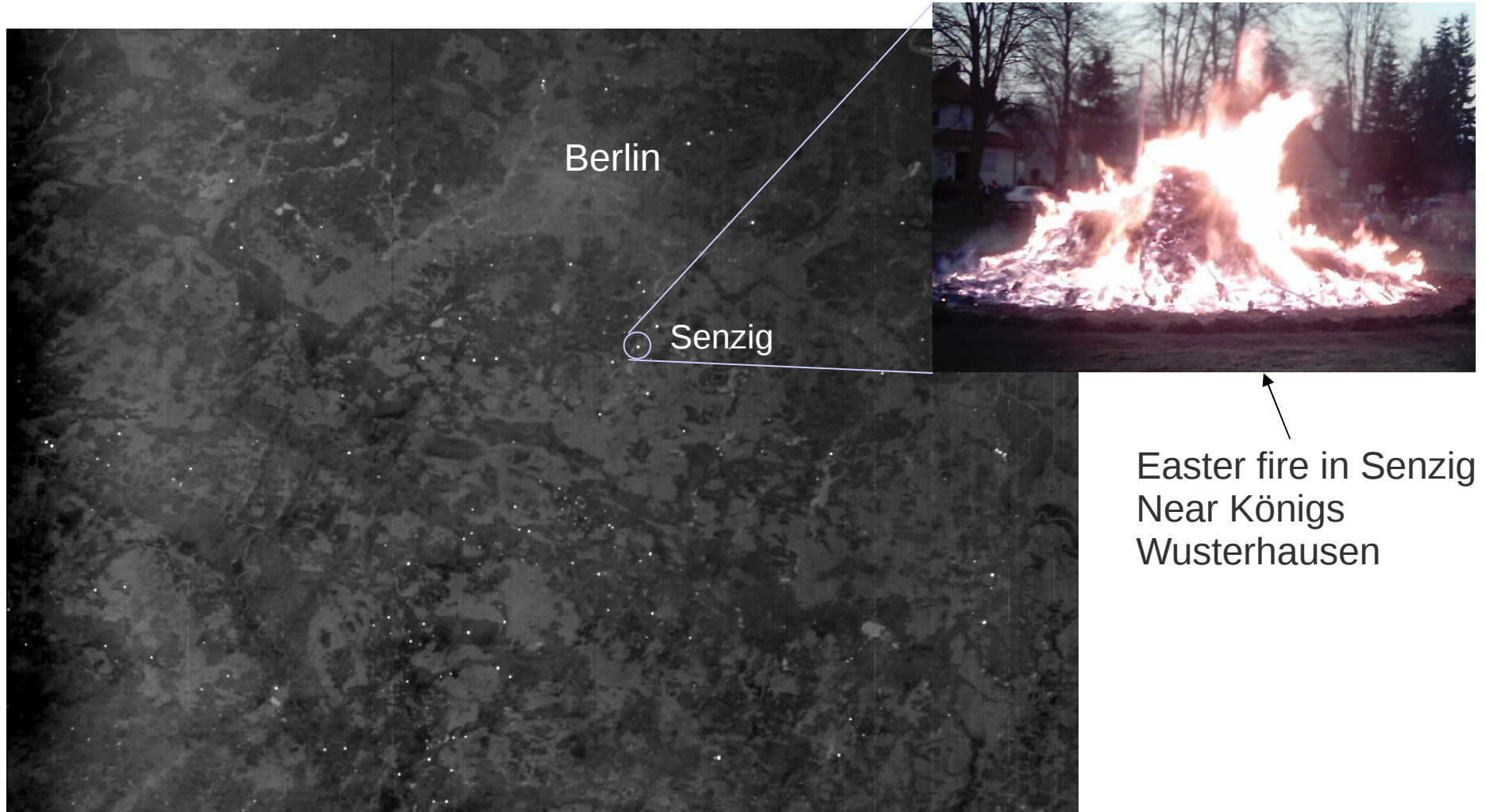
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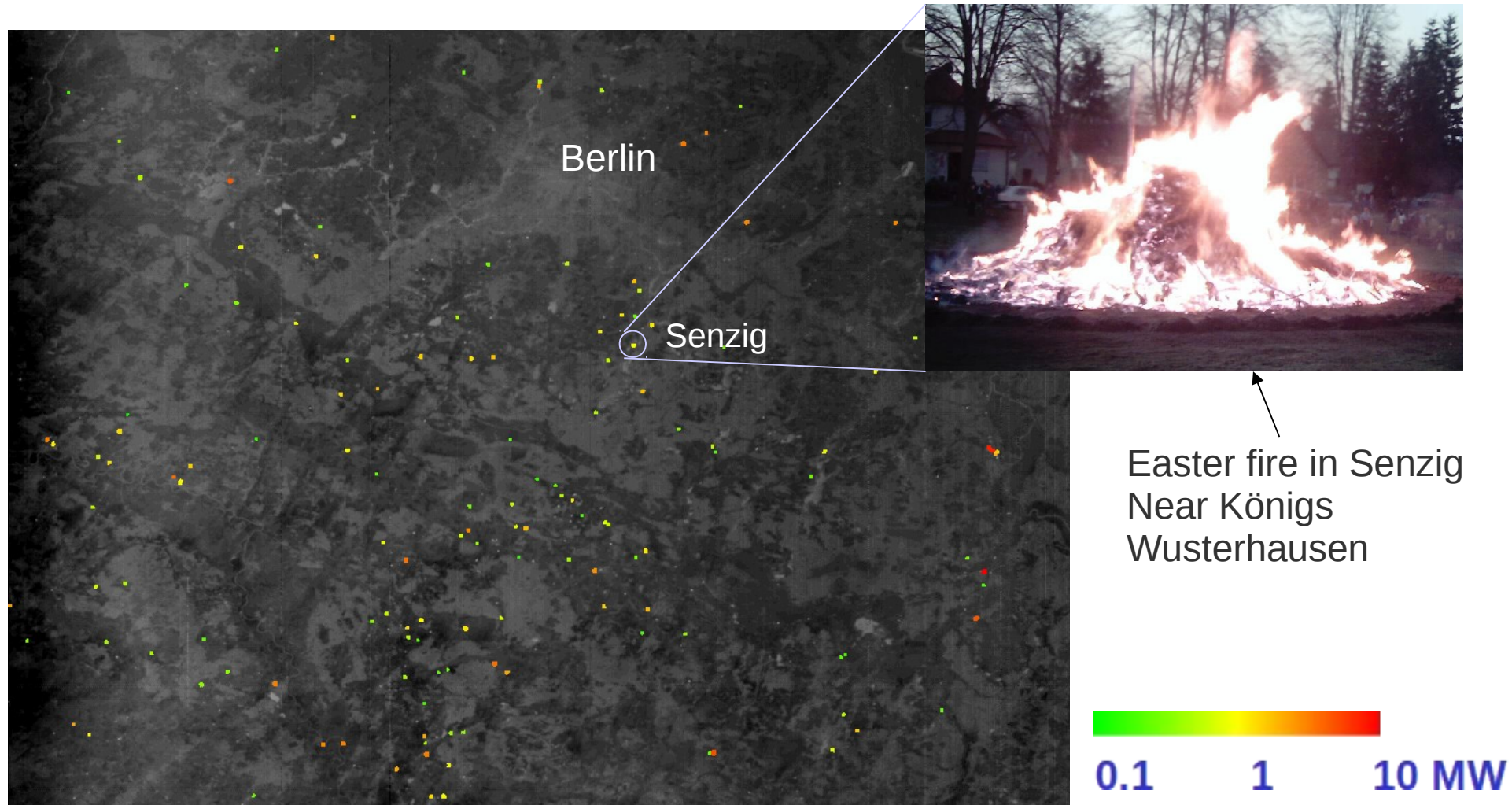
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BIRD results using the Dozier method



Easter fire in Senzig
Near Königs
Wusterhausen

BIRD results using the Dozier method



Energetic evaluation of fires on the infrared background image at 3.4-4.2 μm ,
siehe colour scale

2003: Project Idea

FIRE MONITORING CONSTELLATION



Comparison: FUEGO and FIRE MONITORING CONSTELLATION

Parameter	FFEW-FUEGO	BIRD-FMC
Orbit geometry	700 km/47.5°	700 km
Number of satellite	12	3 or 4
Channels (resolution,swath)		
MIR	144/72 m, 250 km	550 km
TIR	390 m, 250 km	550 km
VNIR		-
RGB-CCD	-	225 m, > 500 km
Minimum resolvable 800 K fire area (nadir)	~5/20 m ²	~5/20 m ²
Revisit time	30.4 minutes	12 hours
Average fire detection	15.2 minutes	6 hours
Data transmission	L-Band directly to users	S-Band directly to users

Workshop Scope

FUSION is a study aiming at combining capabilities of a high resolution earth observation constellation with an infrared sensor system.

At the workshop users can:

- Get in touch with other users and experts from the industry
- Learn about FUSION, it's underlying technology and mission plans
- Discuss their requirements as well as information needs and thus:

Influence the FUSION mission right from the start

End of Presentation

Thank you for your attention.