Fraunhofer Institut Informations- und Datenverarbeitung

Josef Pauli

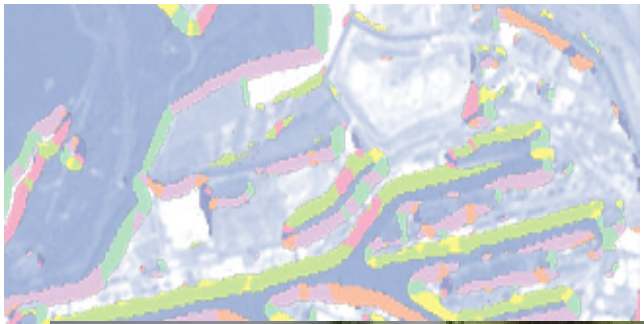
Karlsruhe

pauli@iitb.fraunhofer.de

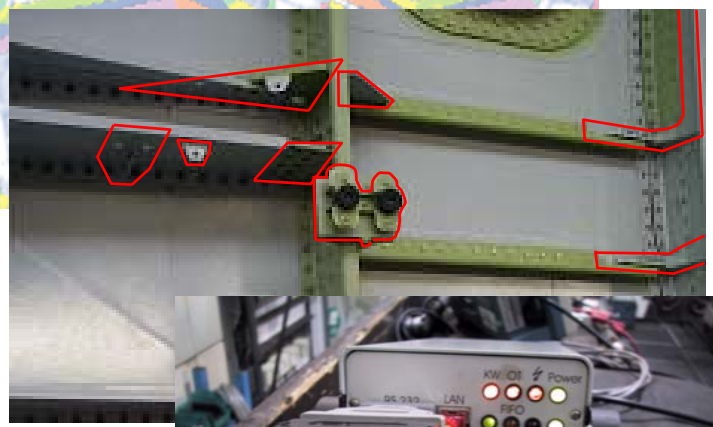
Business area

“Recognition Systems”

Business area “Recognition Systems” at IITB



Security



Savety

Topics

a. Image and signal processing

b. Object/Situation recognition

c. Assessment, Algorithm. learning

d. Diagnosis of dynamical systems

e. Embedded distributed systems

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Object recognition and tracking from mobile platforms

Contents at a glance

1. Screening
2. Data fusion
3. Geocoding
4. Tracking

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1. Screening

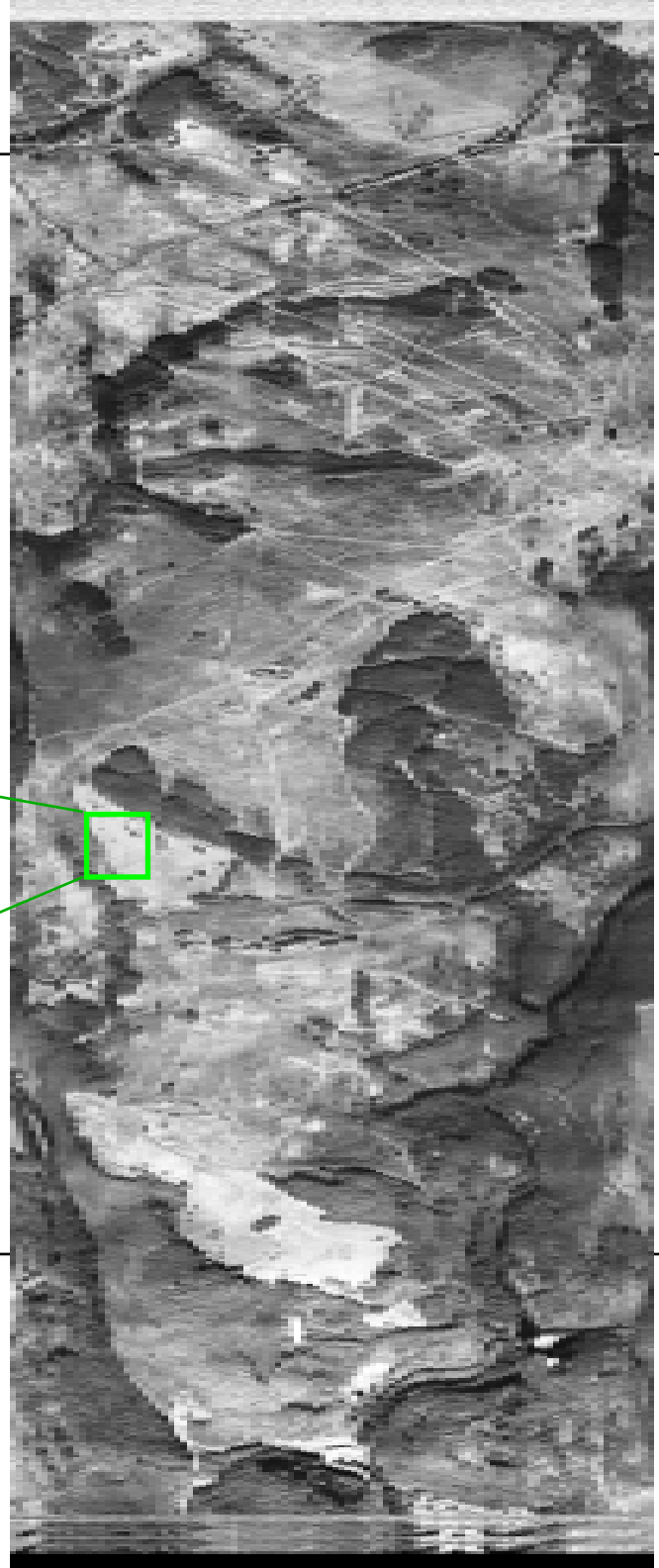
Detection of regions of interest

Infrared-Linescanner

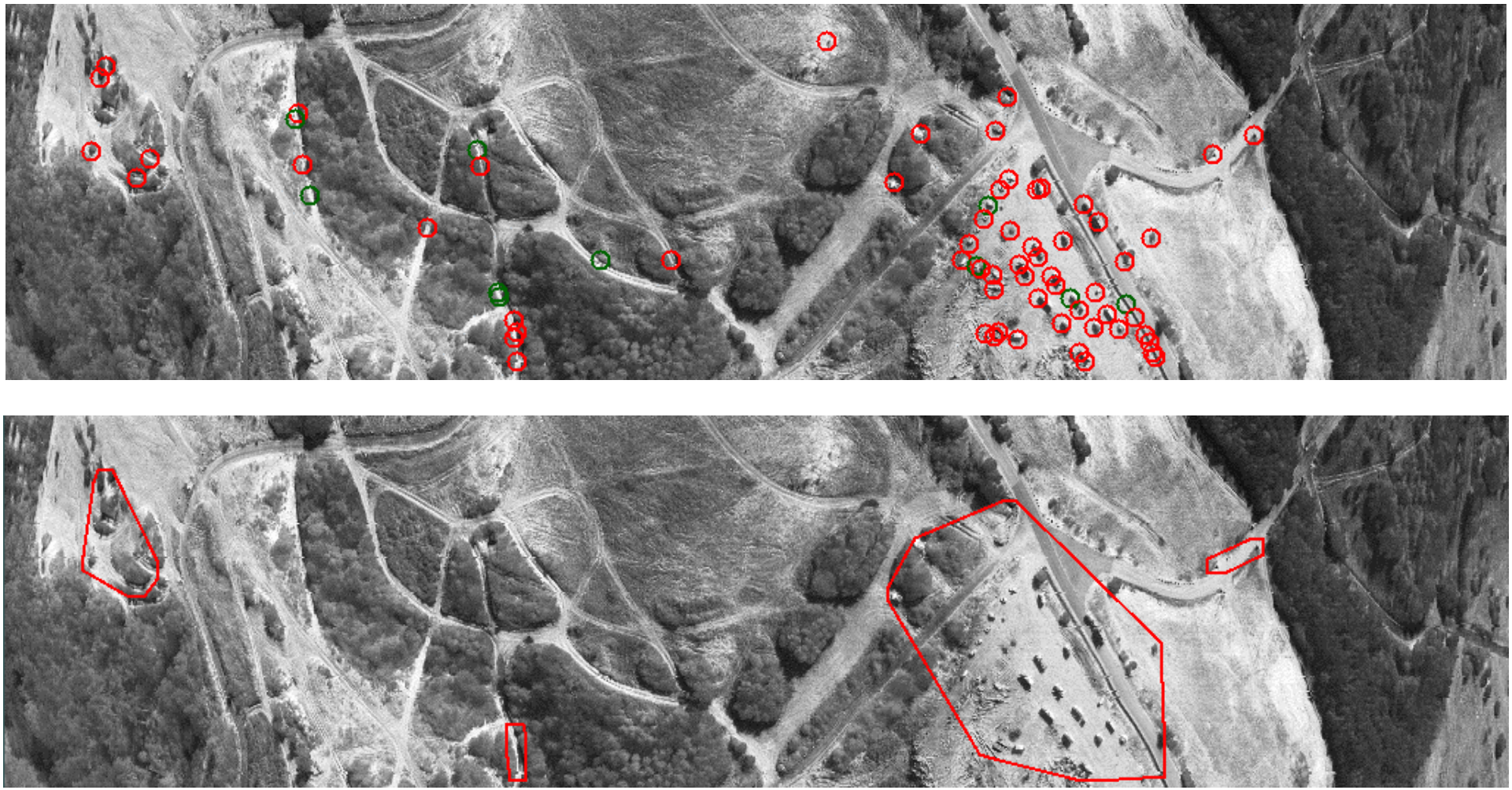
Image dimension

- 12.000 x 240.000 pixels

Zoom-Window

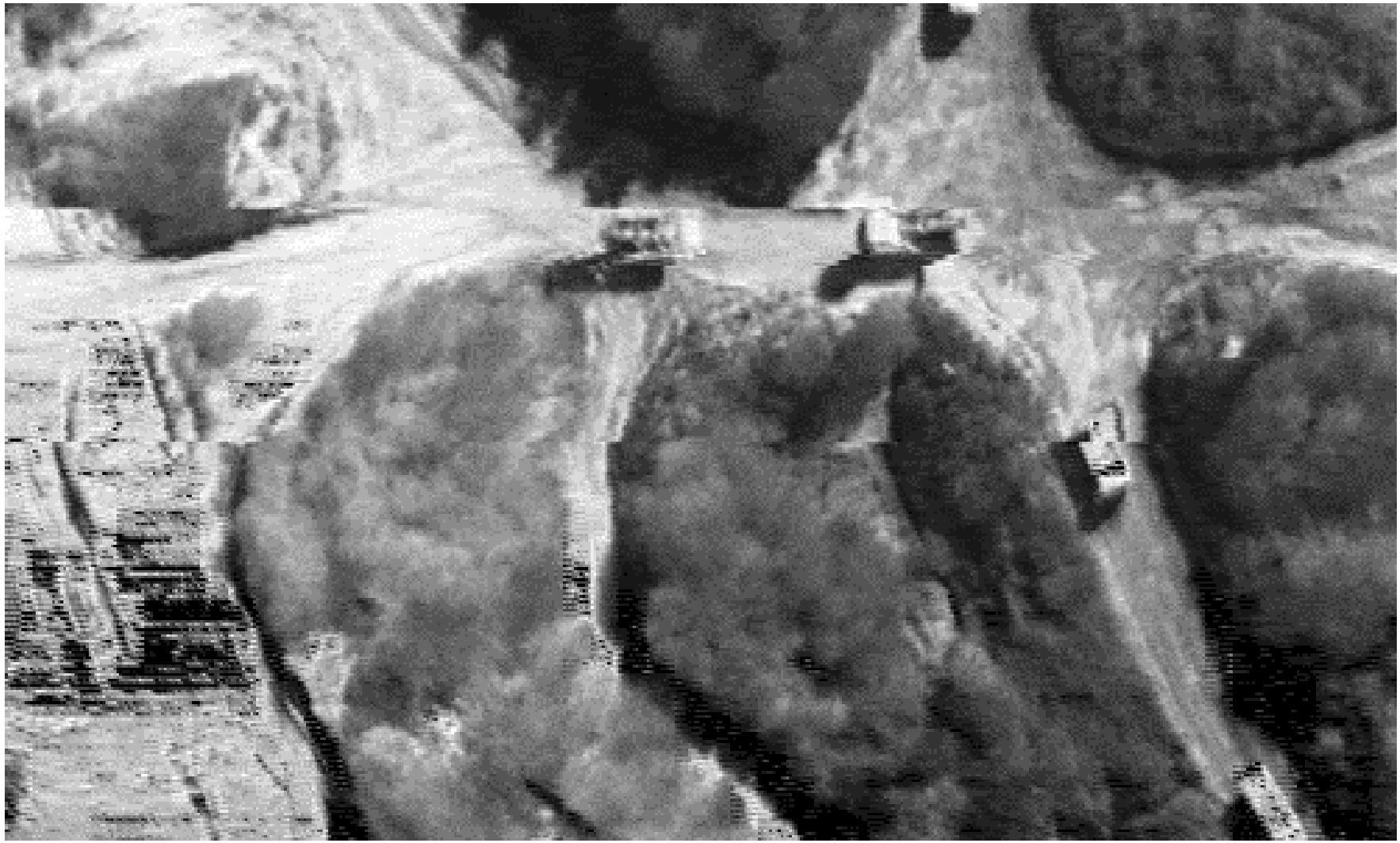


Regions of interest built up from individual target hypotheses



Correcting a phantom image

Correcting a phantom image



2. Data fusion

Fusion of slanted view and orthophoto

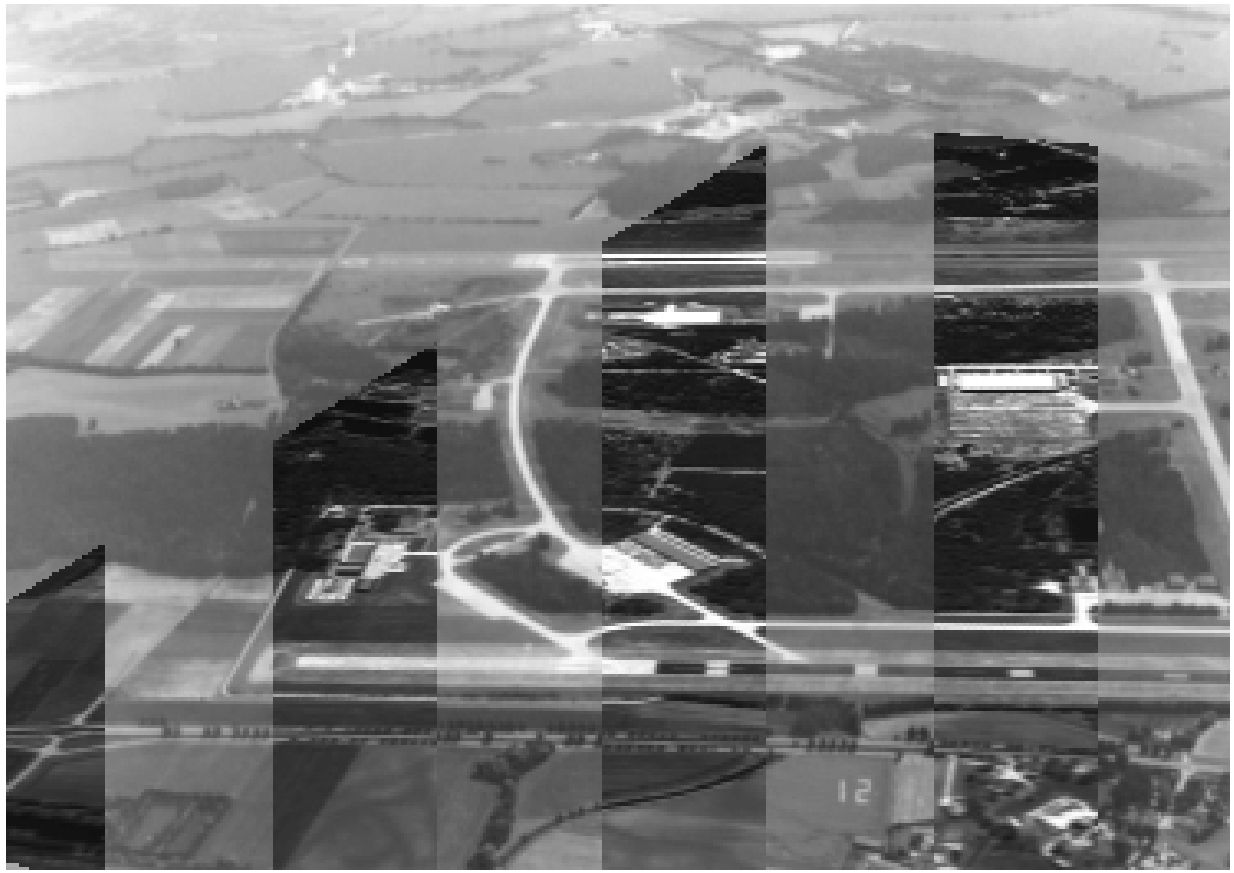
Slanted view

Projective transformation

Orthophoto

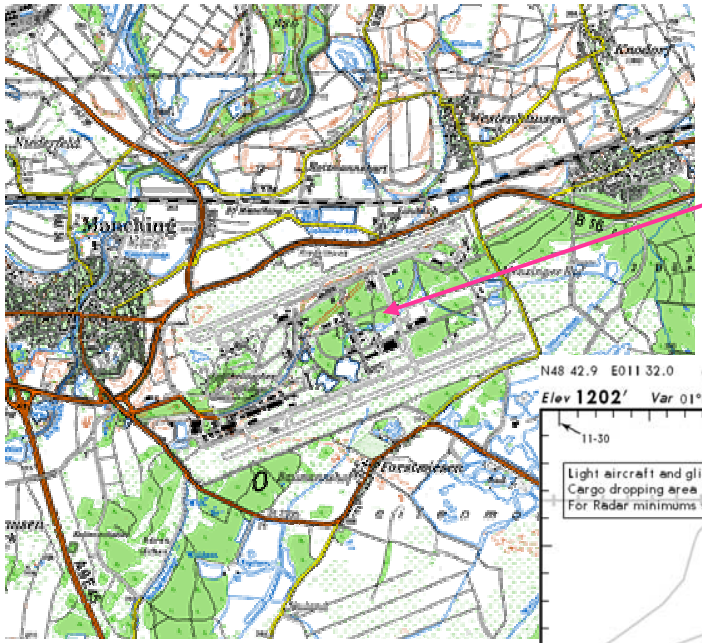
Fusion of slanted view and orthophoto

Overlay of slanted view and projected (warped) orthophoto

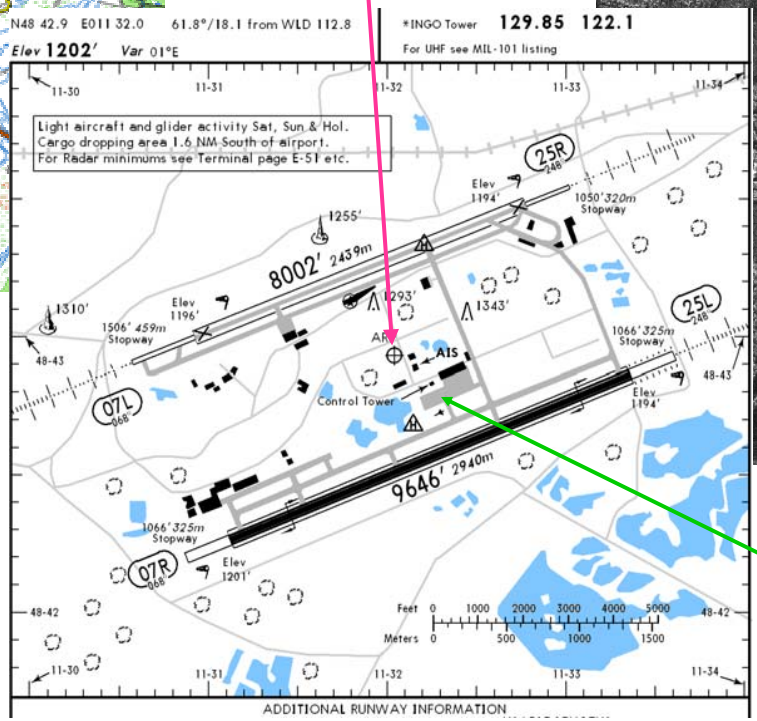


3. Geocoding

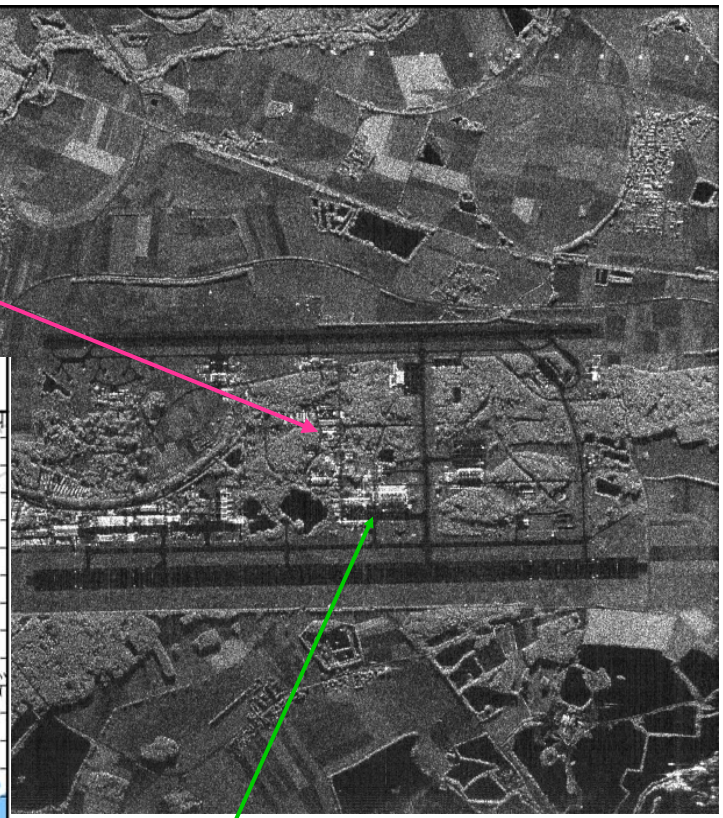
Corresponding sites between image and maps



Topographical map



Special map for pilots



SAR-image

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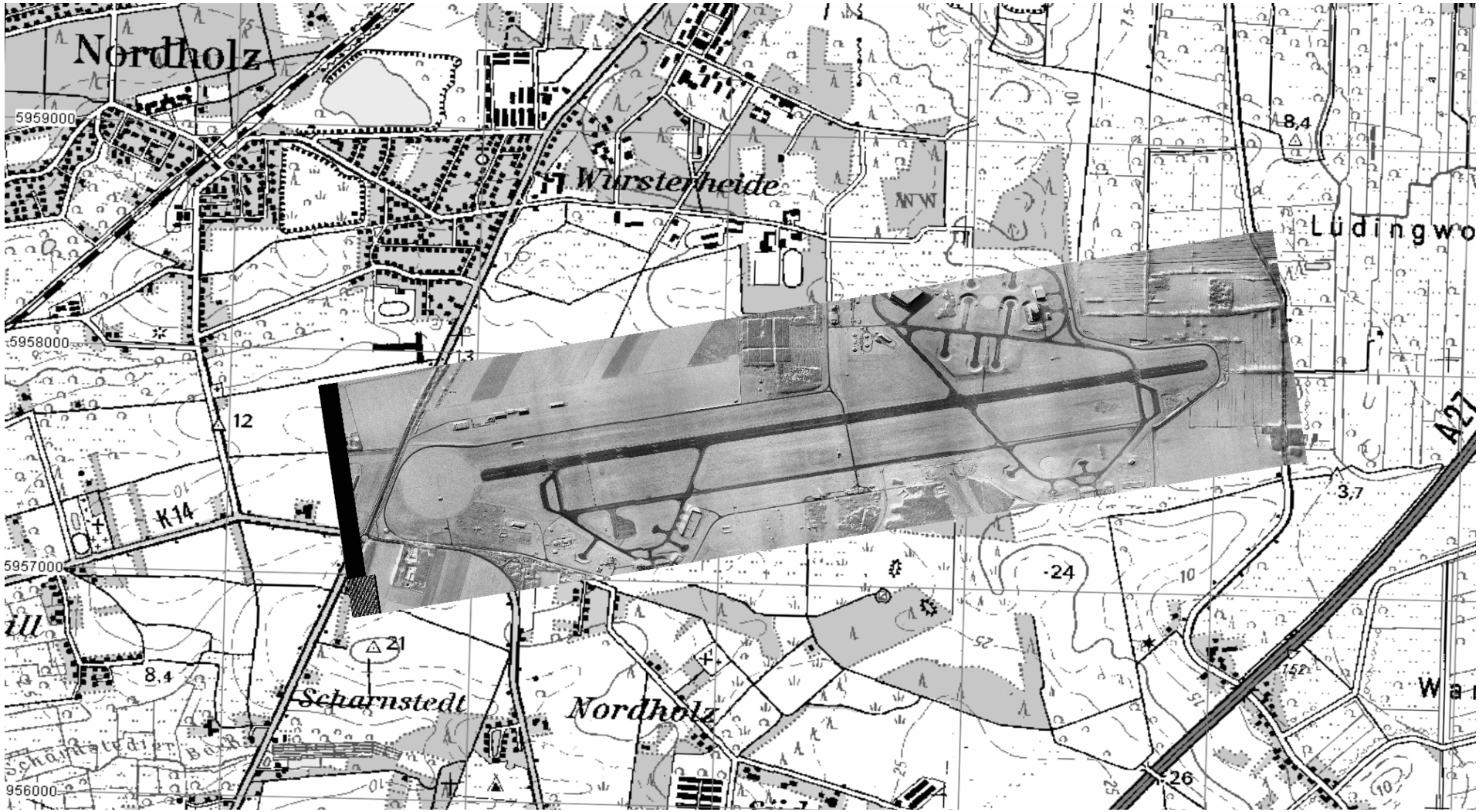
Automatic geocoding of IR-image



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Fine-tuning of the image-to-map transformation

4. Tracking

Stabilizing and mosaicking of images (from helicopter)

Ground surveillance and people tracking (from helicopter)

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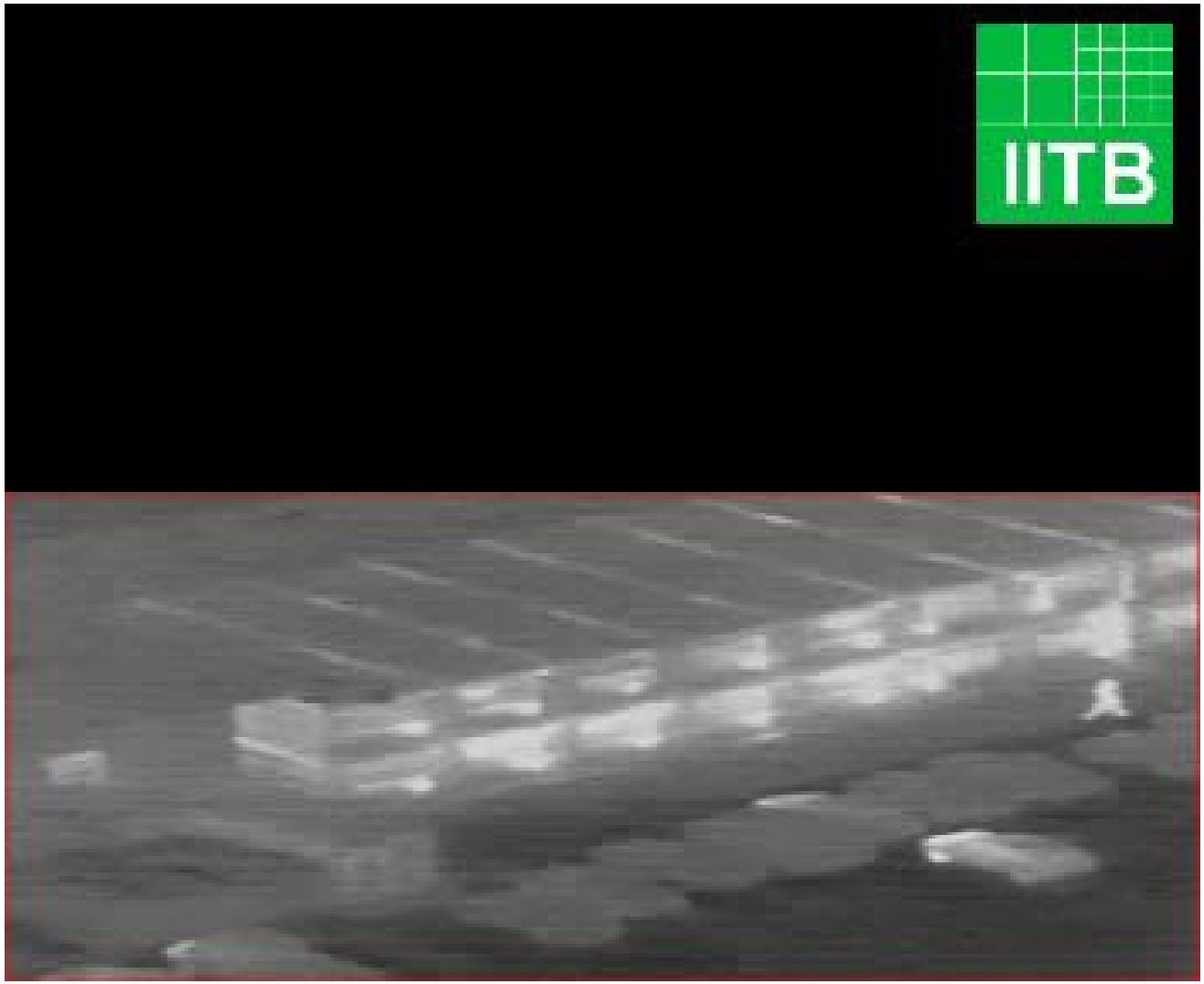
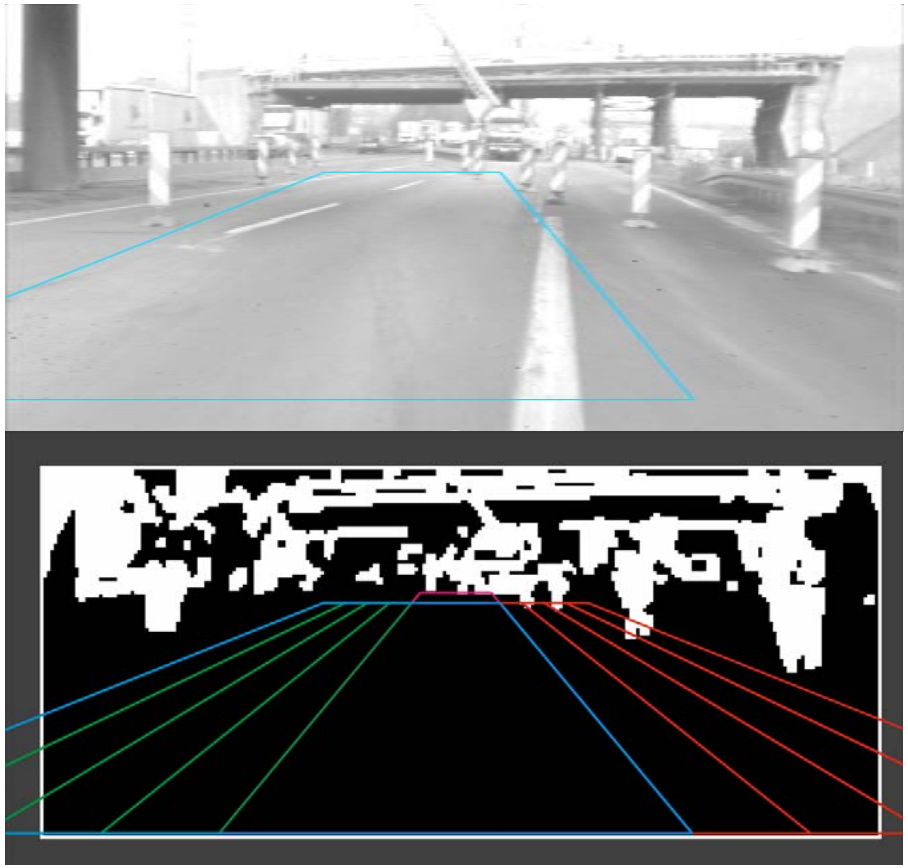
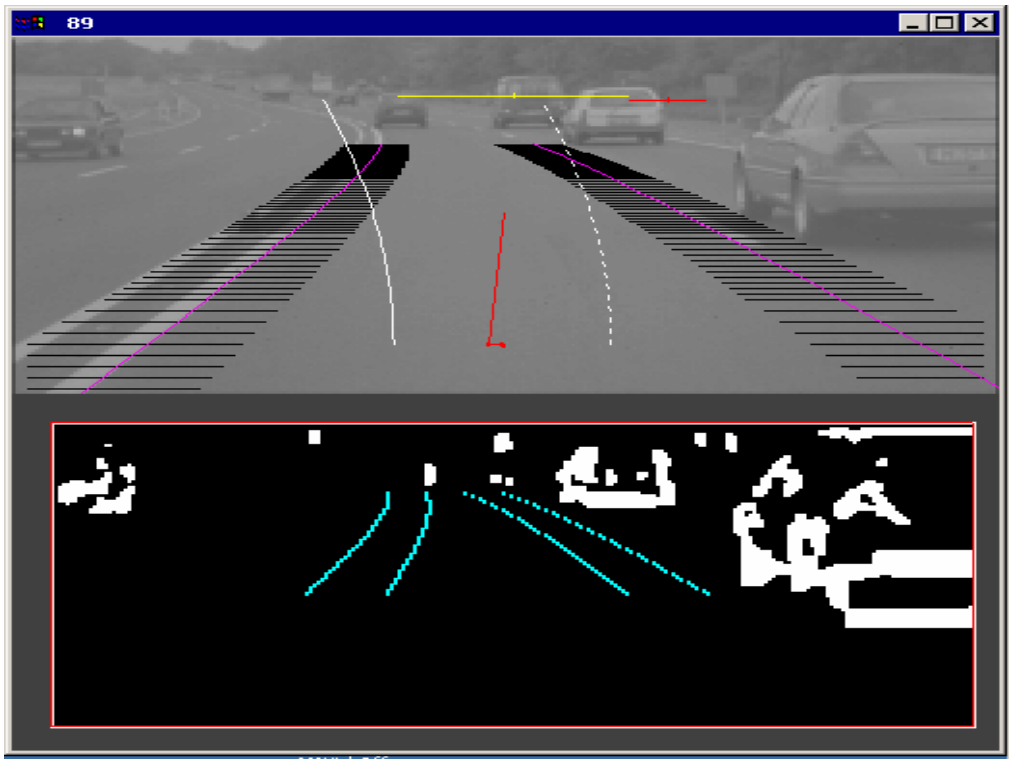


Driving assistance (camera-equipped car)

Free space detection



Relative motion detection



Discussion