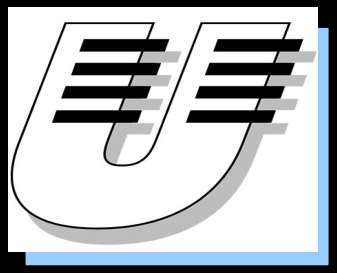
Satellite Information as input for ILS-Based Decision Support in Delivery of Health Services



University of Koblenz-Landau
ReGLaN - Health
Research Group Learning and Neurosciences
Gerhard Ackermann

Project Goals

AIM:	IMPROVED DELIVERY AND OPTIMAL USE OF HEALTH SERVICES IN DISASTER AREAS
HOW?	RAPID, INTEGRATED IDENTIFICATION AND EVALUATION OF RESOURCES AND CONSTRAINTS
WITH:	DELIVERY OF AN ILS-BASED DIGITAL DECISION SUPPORT SYSTEM
TO WHOM?	EMERGENCY SERVICES MANAGERS, DOCTORS, ADMINISTRATION, NURSES (= DECISION MAKERS)

Support Concept: Health Services (1)

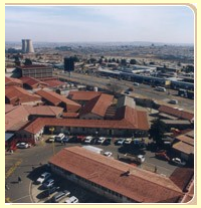
Patients & Local Practitioners

Rural

Support Concept: Health Services (1)

Urban

General Hospitals & Clinics



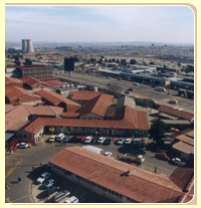
Rural

Patients & Local Practitioners

Support Concept: Health Services (1)

National / International — **Specialised Hospitals & Treatment**

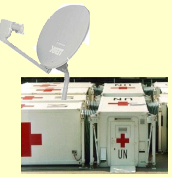
Urban — **General Hospitals & Clinics**



Rural — **Patients & Local Practitioners**

Support Concept: Health Services (2)






Mobile Clinics

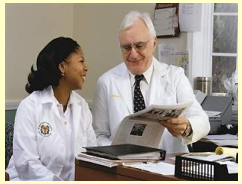
Rural

Flying Ambulance & Doctor

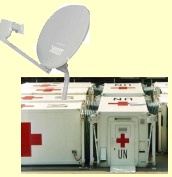
Support Concept: Health Services (2)

Urban

Hospitals



Mobile Clinics



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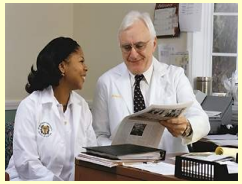
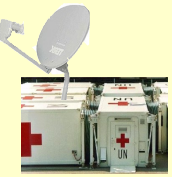


Medical Helpdesk

Mobile Clinics



Rural

Flying Ambulance & Doctor

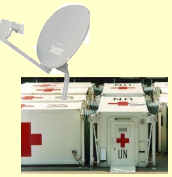
Support Concept: Health Services (2)

National/International

Specialists

Urban

Medical Helpdesk



Mobile Clinics

Rural

Flying Ambulance & Doctor

Problems

- Service requirements can change rapidly.
- Circumstances can change daily.
- The Communities to be served vary greatly.
- Resource availability changes almost continuously.

The Health Services environment is complex and dynamic.
There is no single „best“ solution.

WE NEED A DECISION SUPPORT SYSTEM THAT CAN CONSISTENTLY HELP TO IDENTIFY THE BEST SOLUTION FOR EACH SET OF CIRCUMSTANCES.

Decision Support Model

FUNCTIONS

Remain the same

Qualified by:

- Requirements
- Constraints
- Priorities

Decision Support Model

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Remain the same

Qualified by:

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- Constraints
- Priorities

RESOURCES

Qualified by:

- Characteristics
- Capabilities
- Physical Location
- Individual Requirements and Constraints

Decision Support Model

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SOLUTIONS

- Combinations of resources
- Consolidated characteristics

Finite Set

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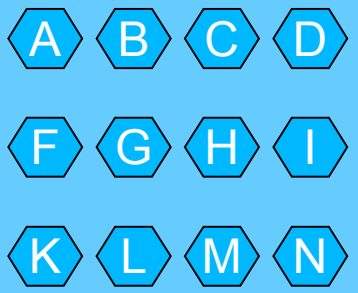

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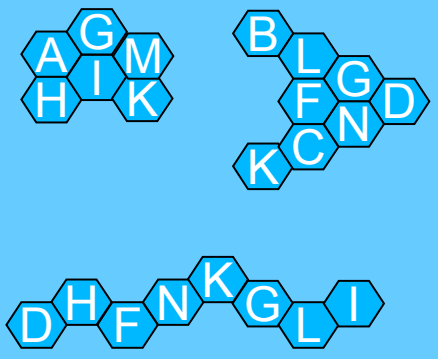

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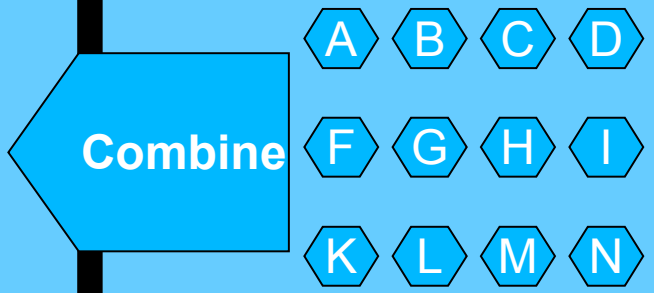

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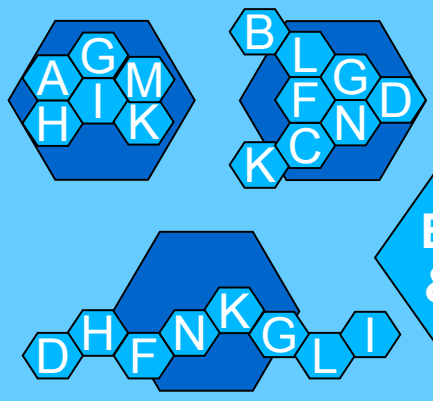
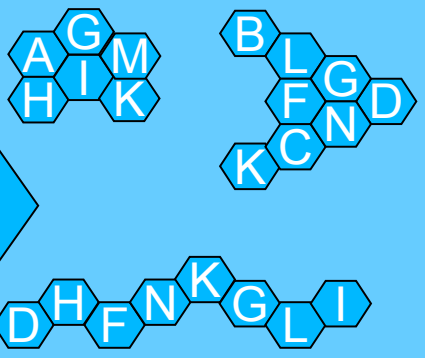


SOLUTIONS

- Combinations of resources
- Consolidated characteristics

Finite Set



Evaluate & Select

Combine

RESOURCES

Qualified by:

- Characteristics
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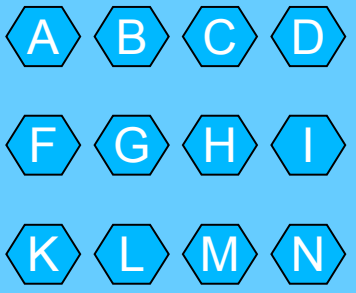
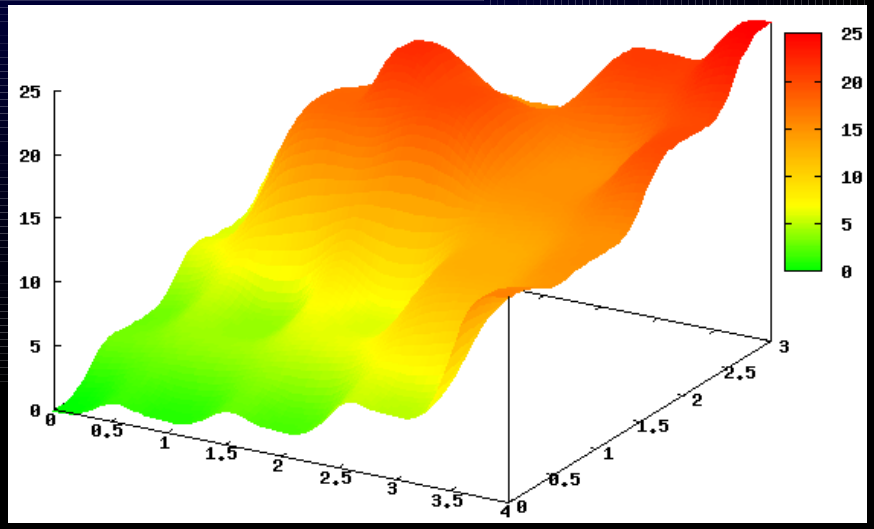
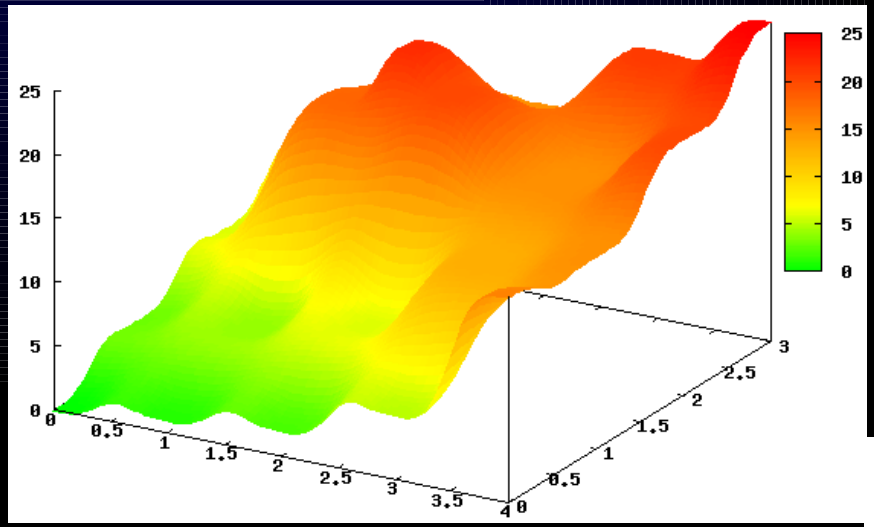


Satellite Information on Landslides



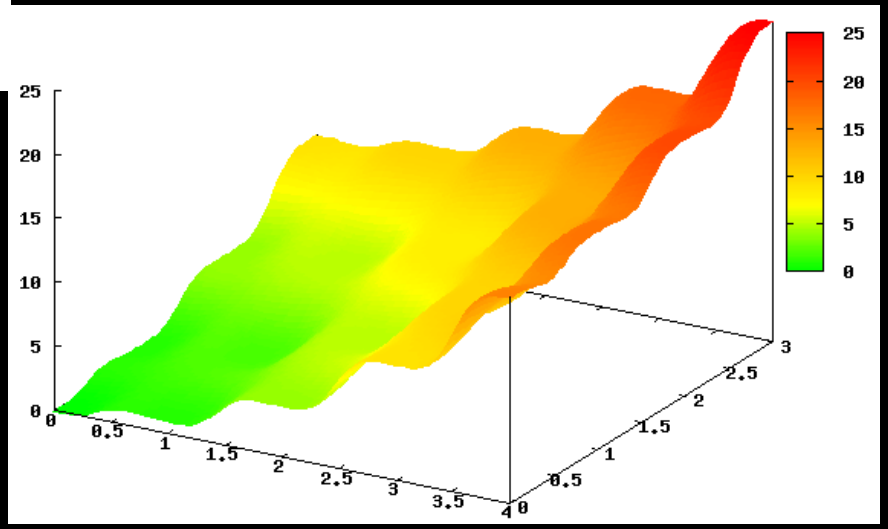
Before the Landslide

Satellite Information on Landslides



Before the Landslide

After the Landslide



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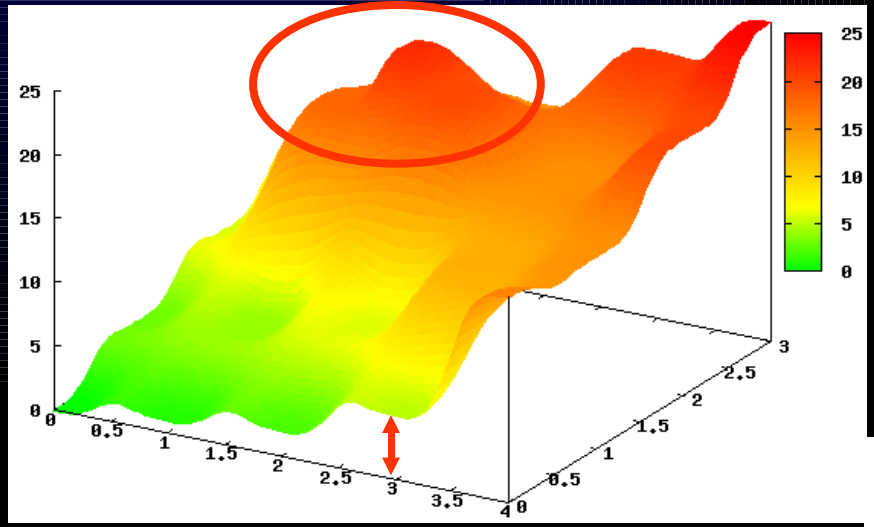

Before the Landslide

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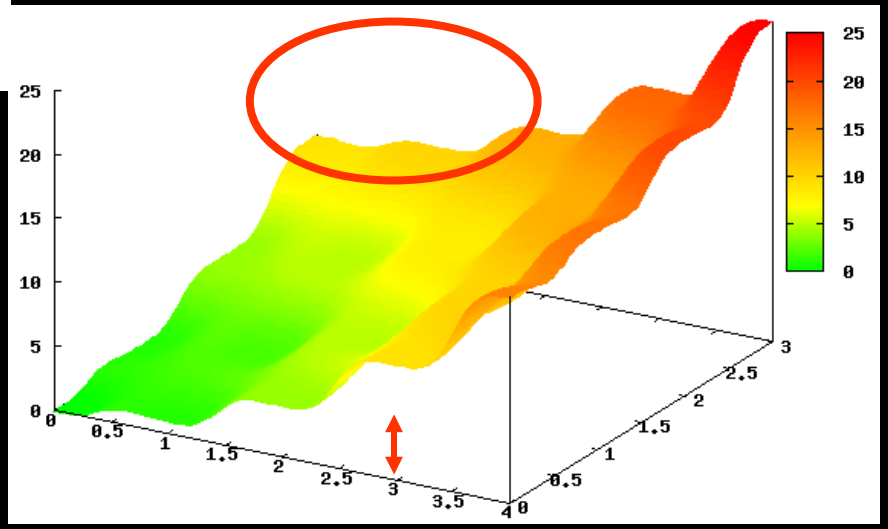
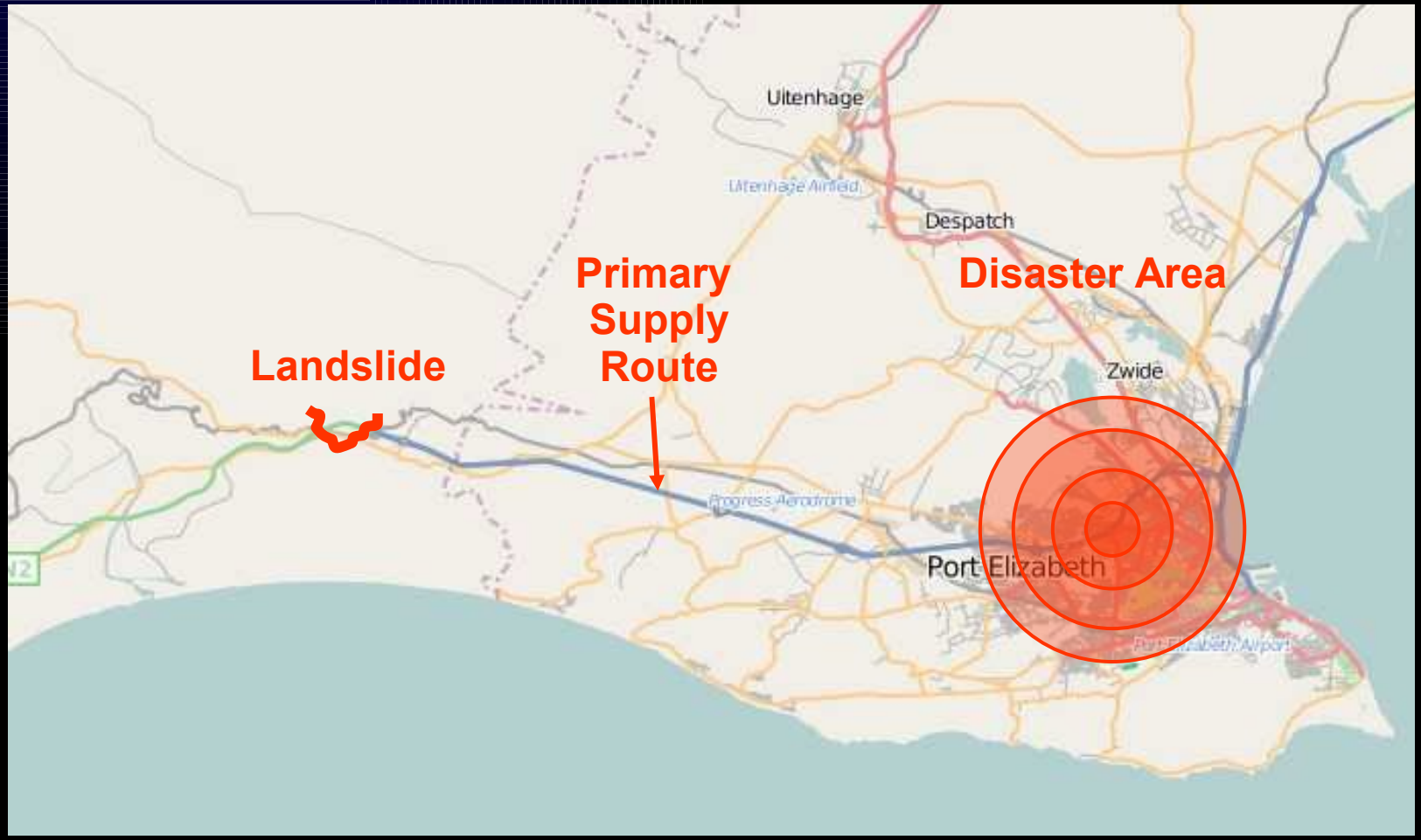


EXAMPLE


Uitenhage
Uitenhage Airfield
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Disaster Area
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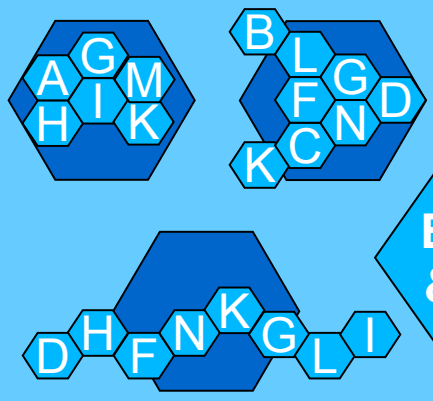

SOLUTIONS

- Combinations of resources
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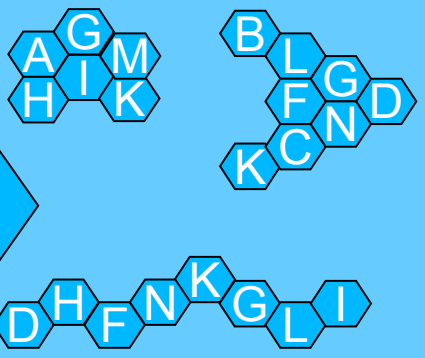

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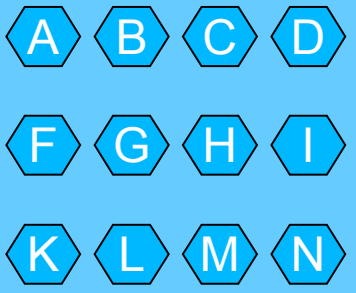

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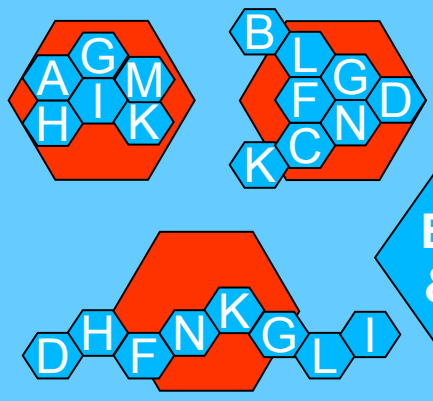

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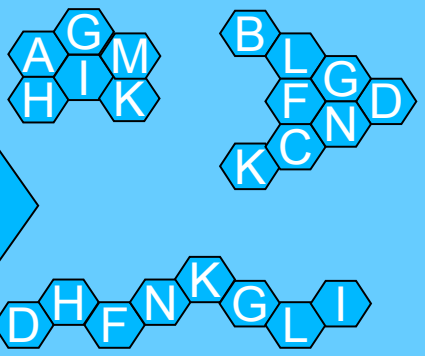

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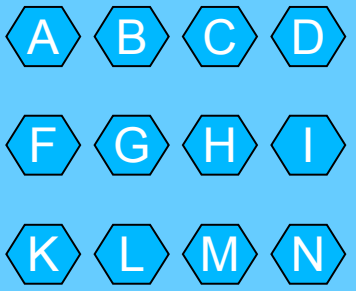

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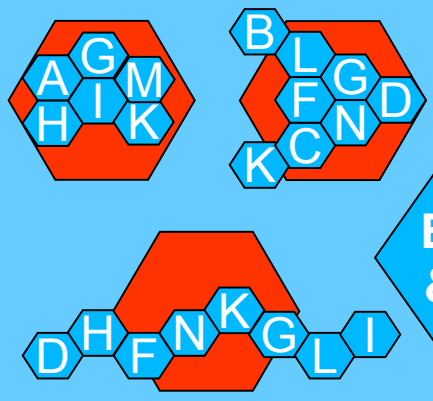

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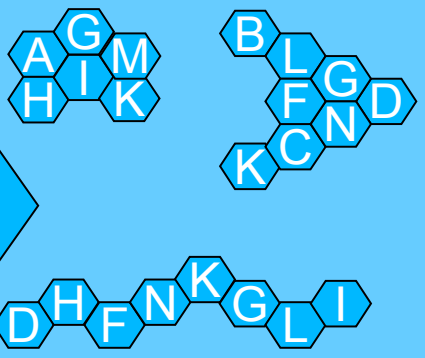

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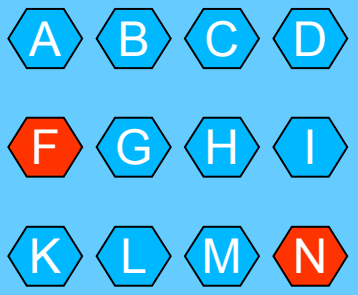

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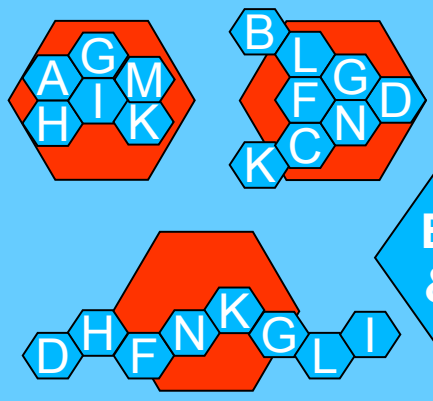

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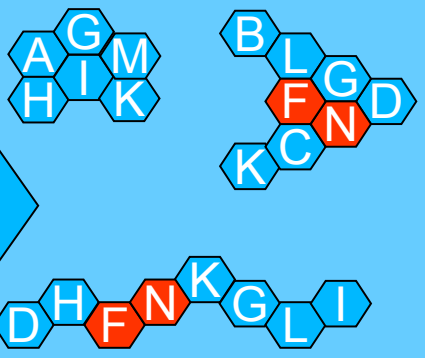

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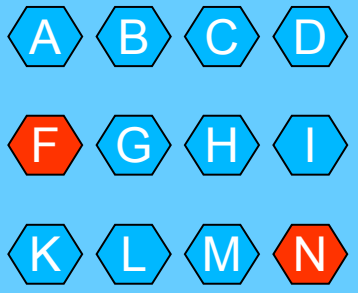

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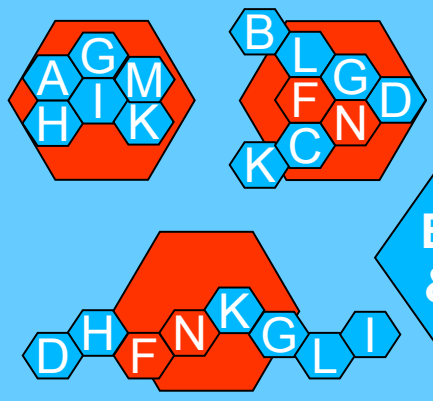

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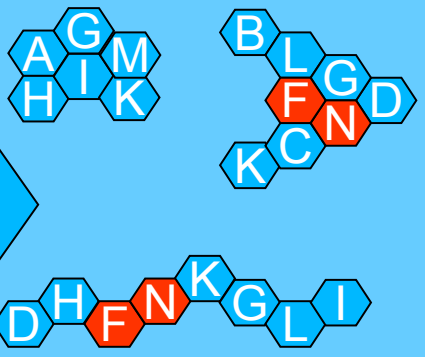

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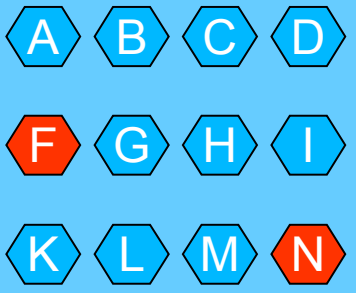

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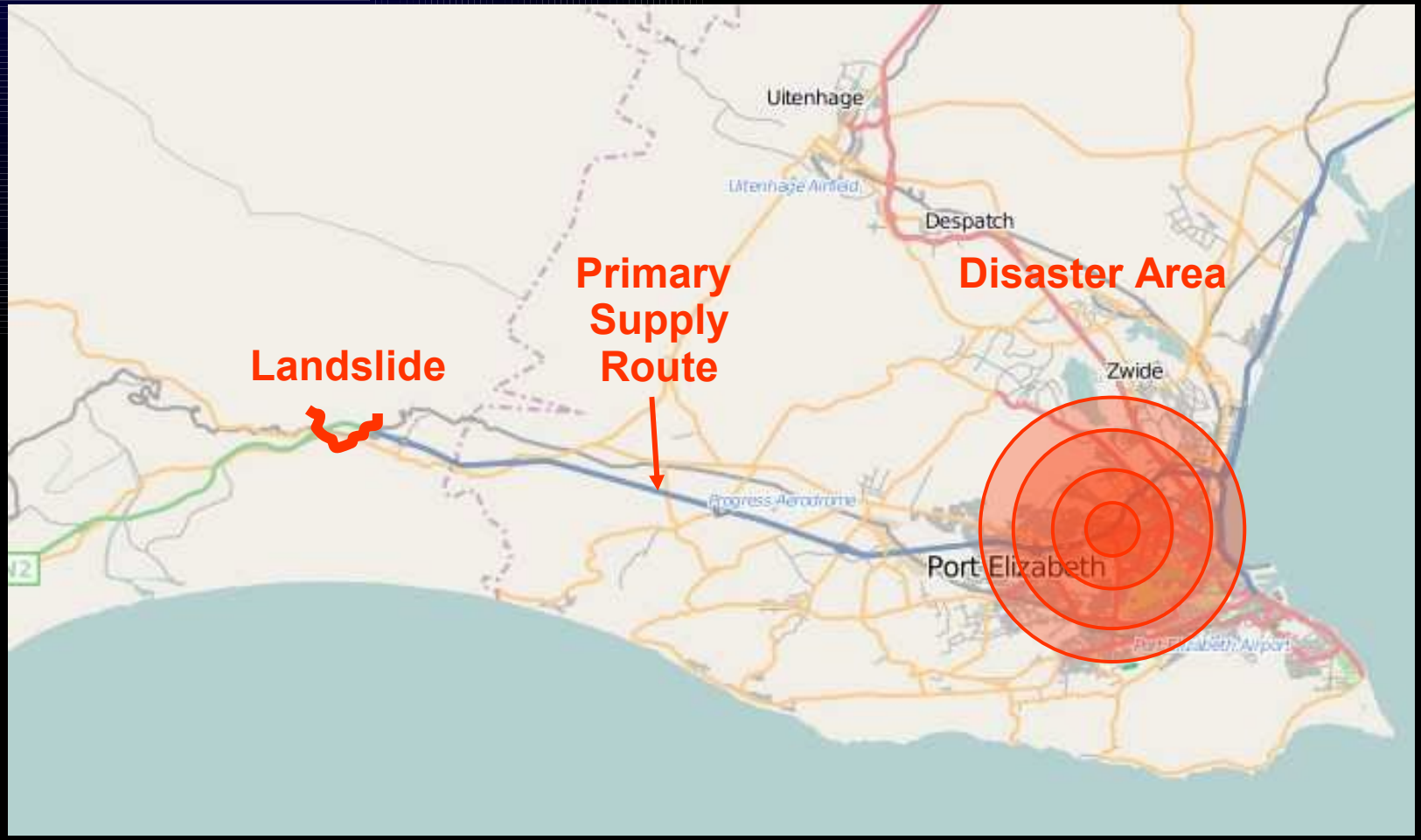
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Conclusion

- „Real-time“ satellite information can be used effectively in the Decision Support System.
- Using the satelite information in the Decision Support System increases the benefits that can be derived from the information.
- The Decision Support System can help to make timely, informed decisions regarding the delivery of Health Services to disaster areas.

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Thank you for your attention.