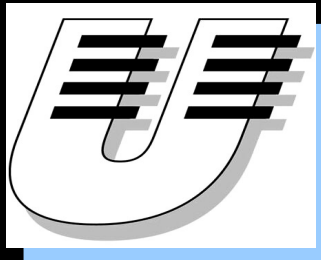


**Satellite Information
as input for
ILS-Based Decision Support
in
Delivery of Health Services**



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**



**Patients & Local
Practitioners**

Rural



Support Concept: Health Services (1)

**National /
International**

**Specialised
Hospitals &
Treatment**



Urban

**General
Hospitals &
Clinics**



**Patients & Local
Practitioners**

Rural



Support Concept: Health Services (2)



**Mobile
Clinics**



Rural



Flying Ambulance & Doctor

Support Concept: Health Services (2)

Urban

Hospitals



Mobile Clinics



Rural



Flying Ambulance & Doctor

Support Concept: Health Services (2)

**Urban
Hospitals**



**Medical
Helpdesk**



**Mobile
Clinics**

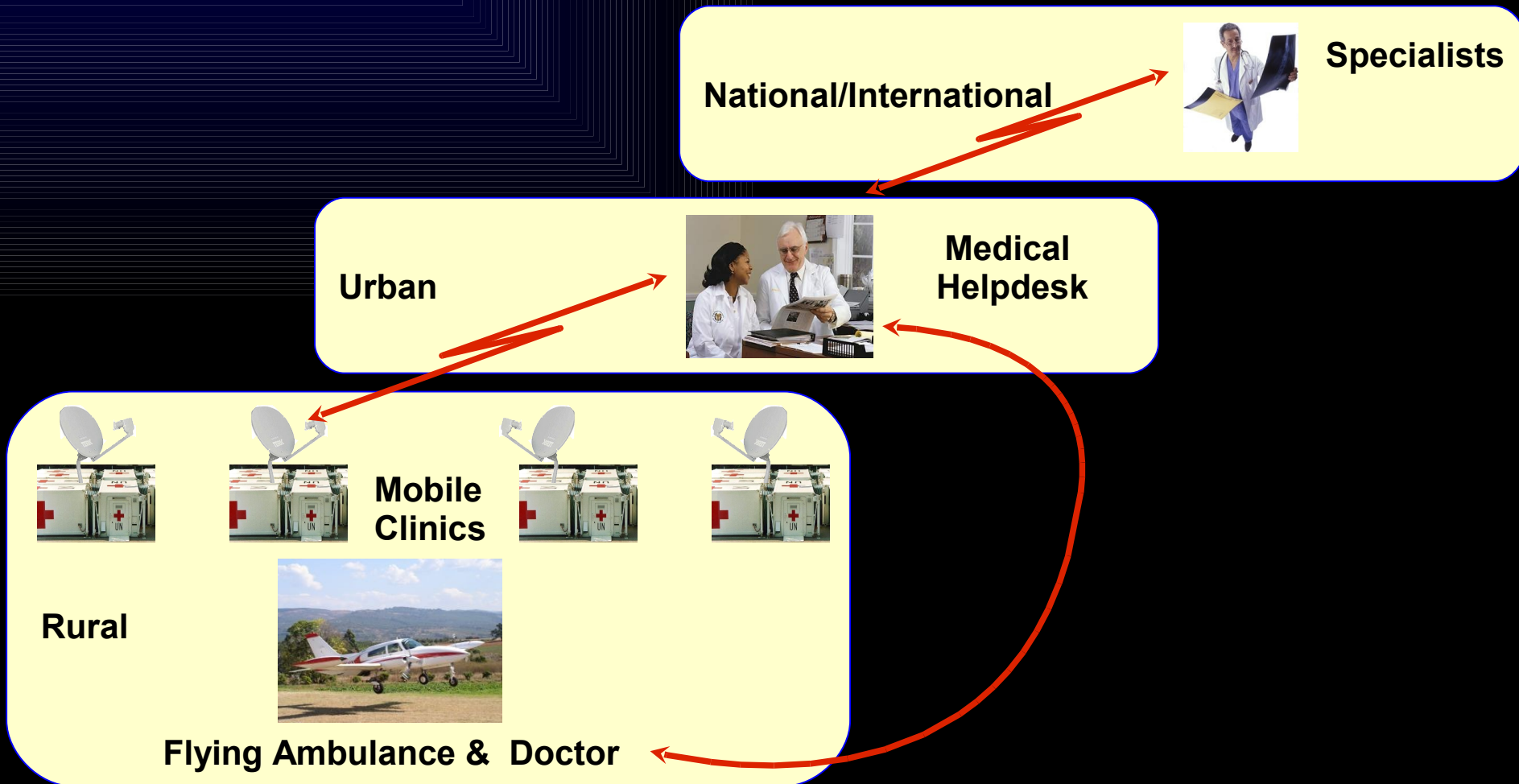


Rural



Flying Ambulance & Doctor

Support Concept: Health Services (2)



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

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RESOURCES

Qualified by:

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

Decision Support Model

FUNCTIONS

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SOLUTIONS

- Combinations of resources
- Consolidated characteristics

Finite Set

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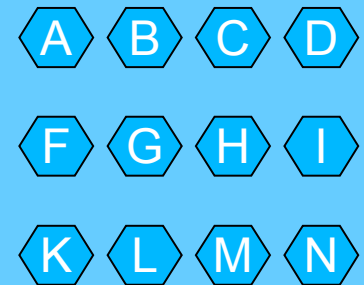
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Decision Support Model

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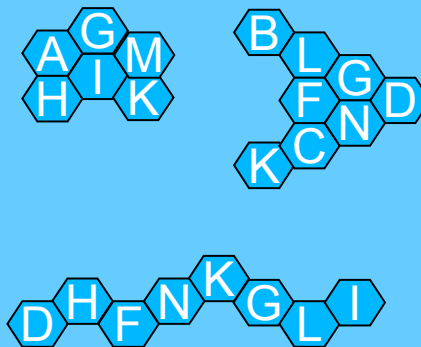
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Finite Set

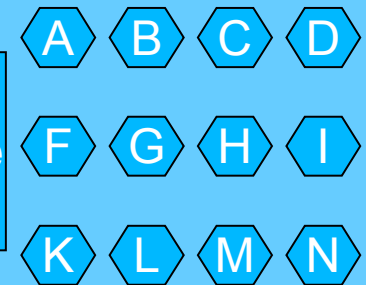


RESOURCES

Qualified by:

- Characteristics
- Capabilities
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Combine



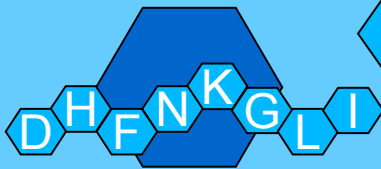
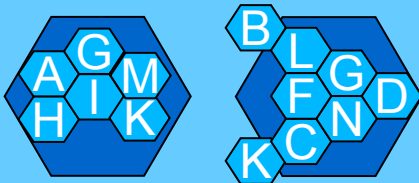
Decision Support Model

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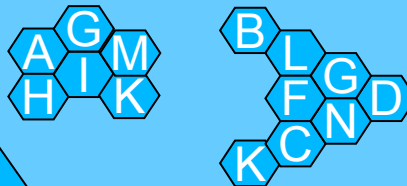


Evaluate
& Select

SOLUTIONS

- Combinations of resources
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Finite Set

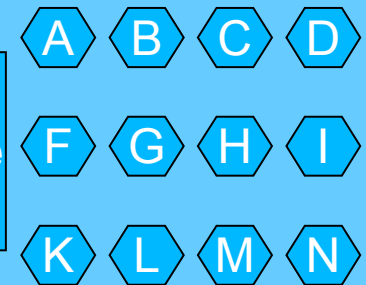


RESOURCES

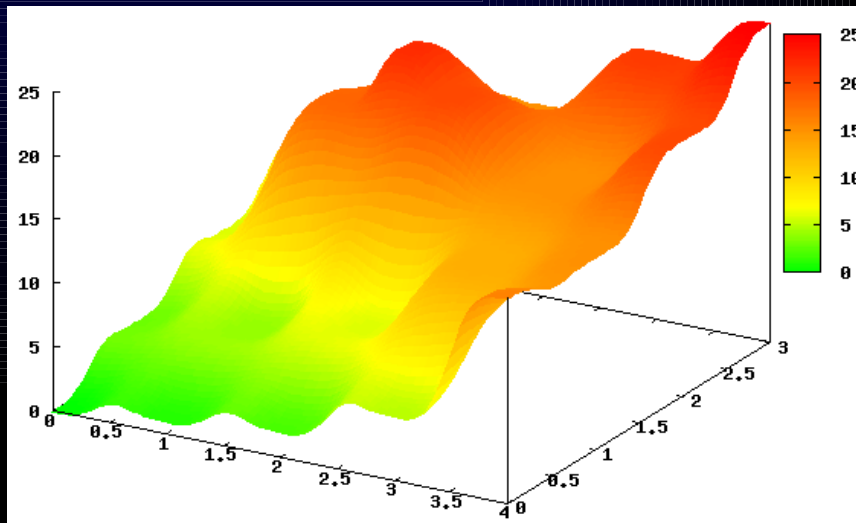
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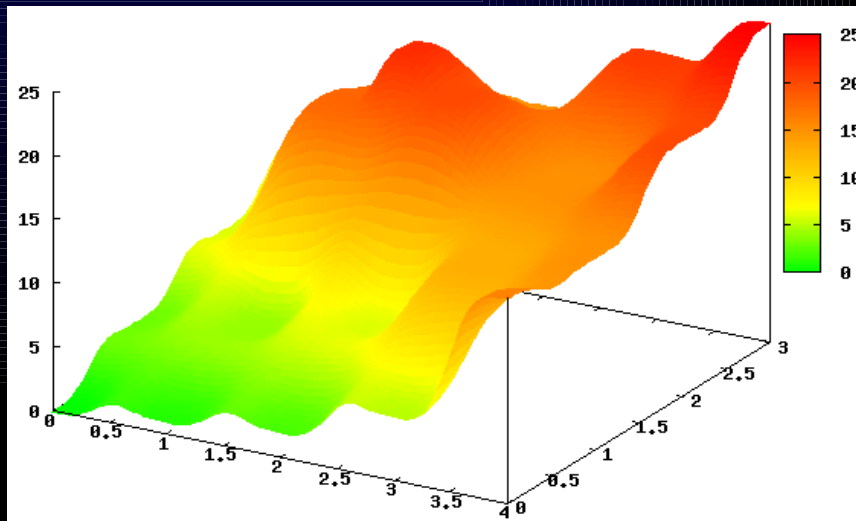


Satellite Information on Landslides



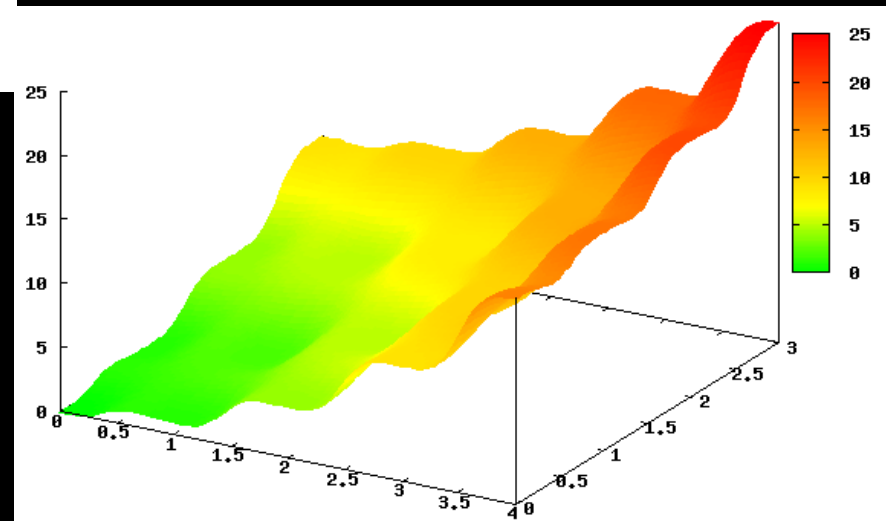
Before the Landslide

Satellite Information on Landslides

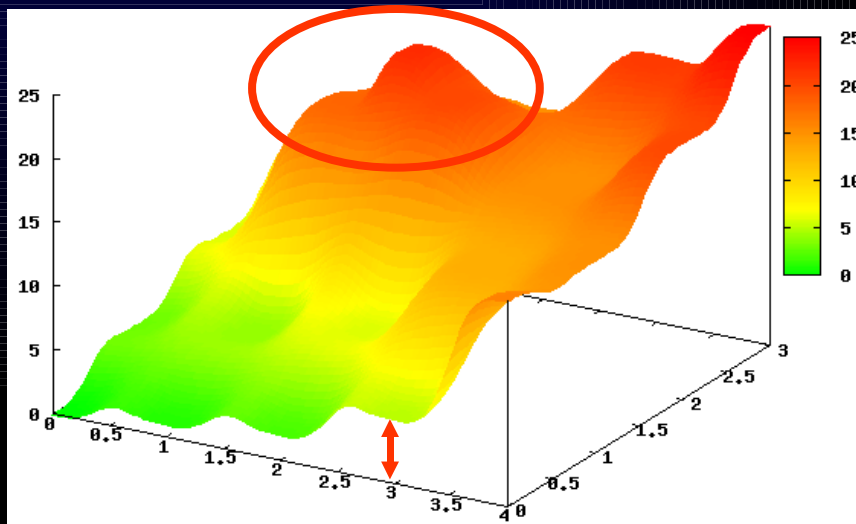


Before the Landslide

After the Landslide

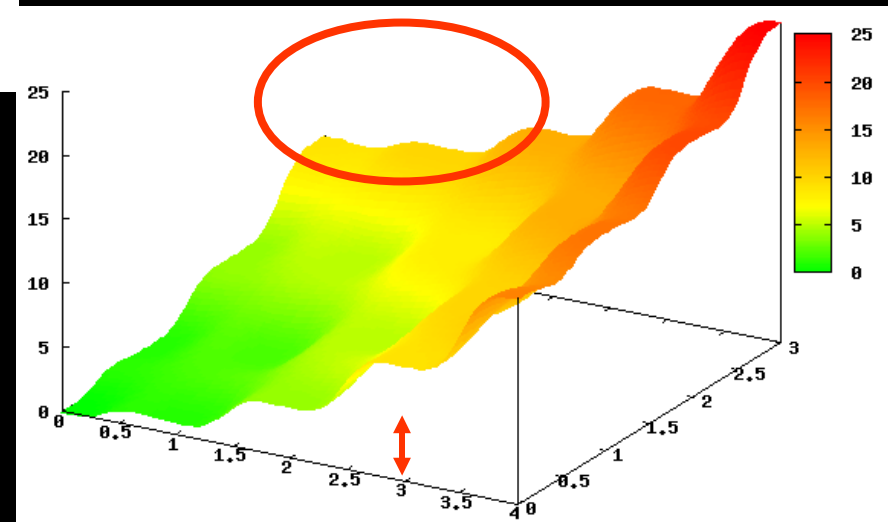


Satellite Information on Landslides

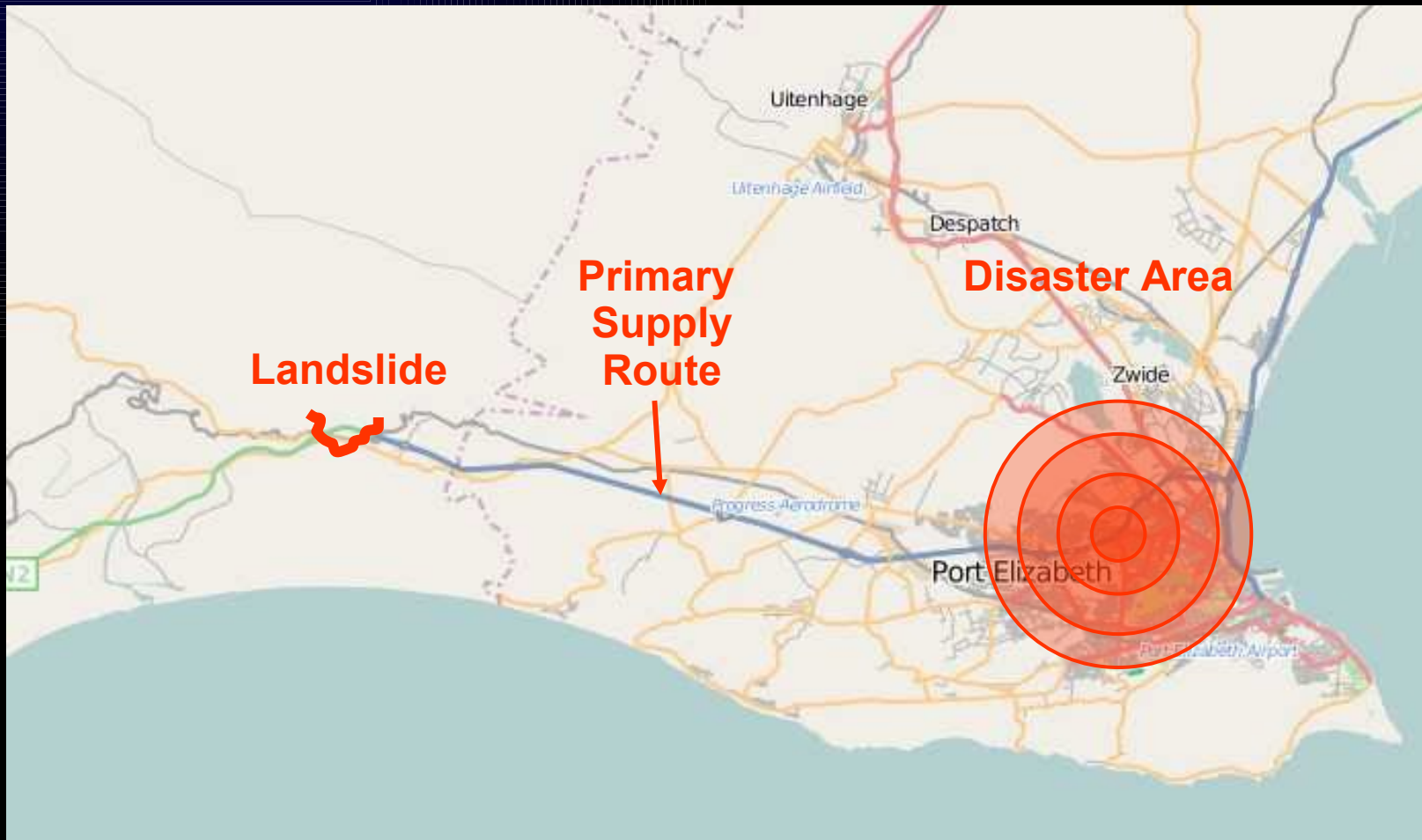


Before the Landslide

After the Landslide



EXAMPLE



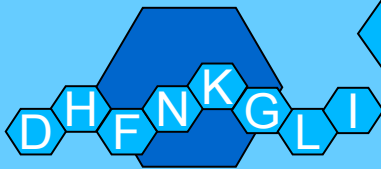
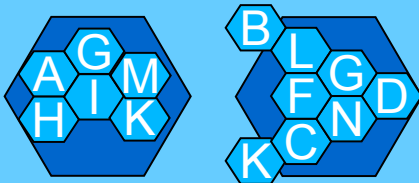
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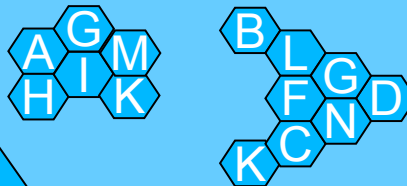


Evaluate
& Select

SOLUTIONS

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Finite Set

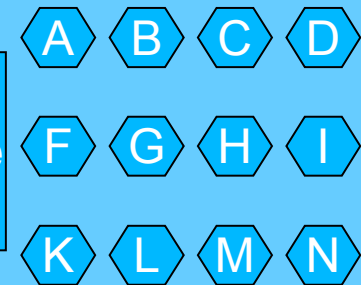


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Combine



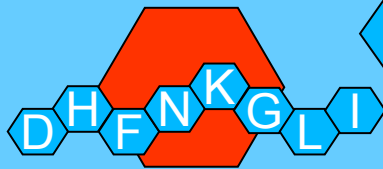
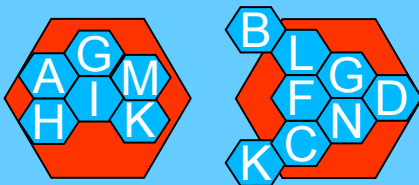
Decision Support Model

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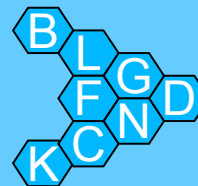


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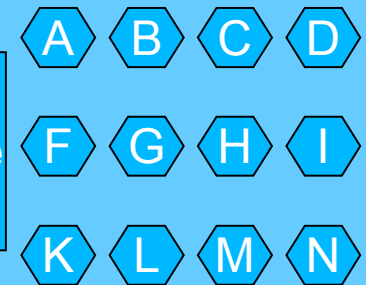


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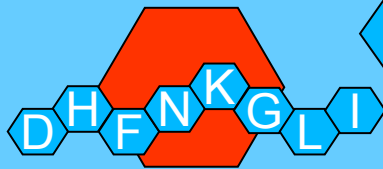
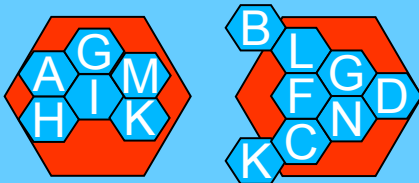
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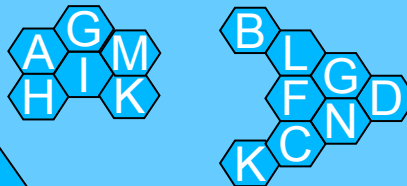


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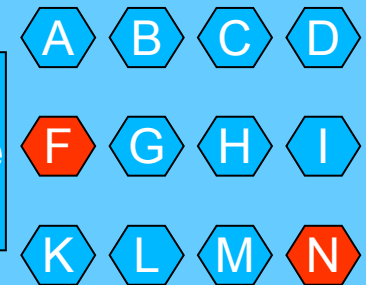


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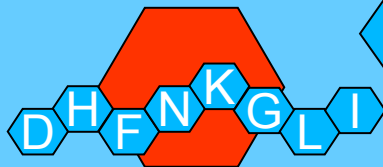
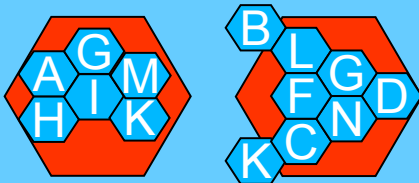
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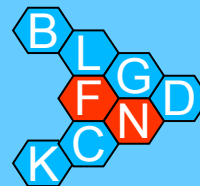


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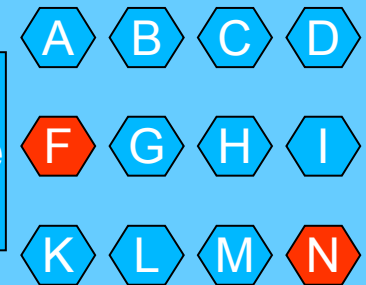


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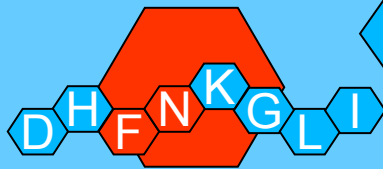
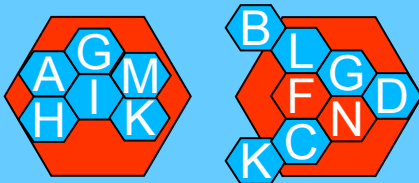
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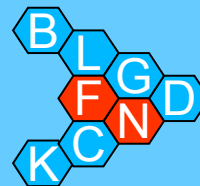


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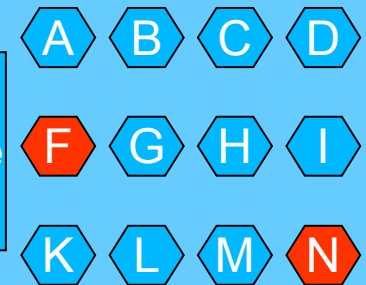


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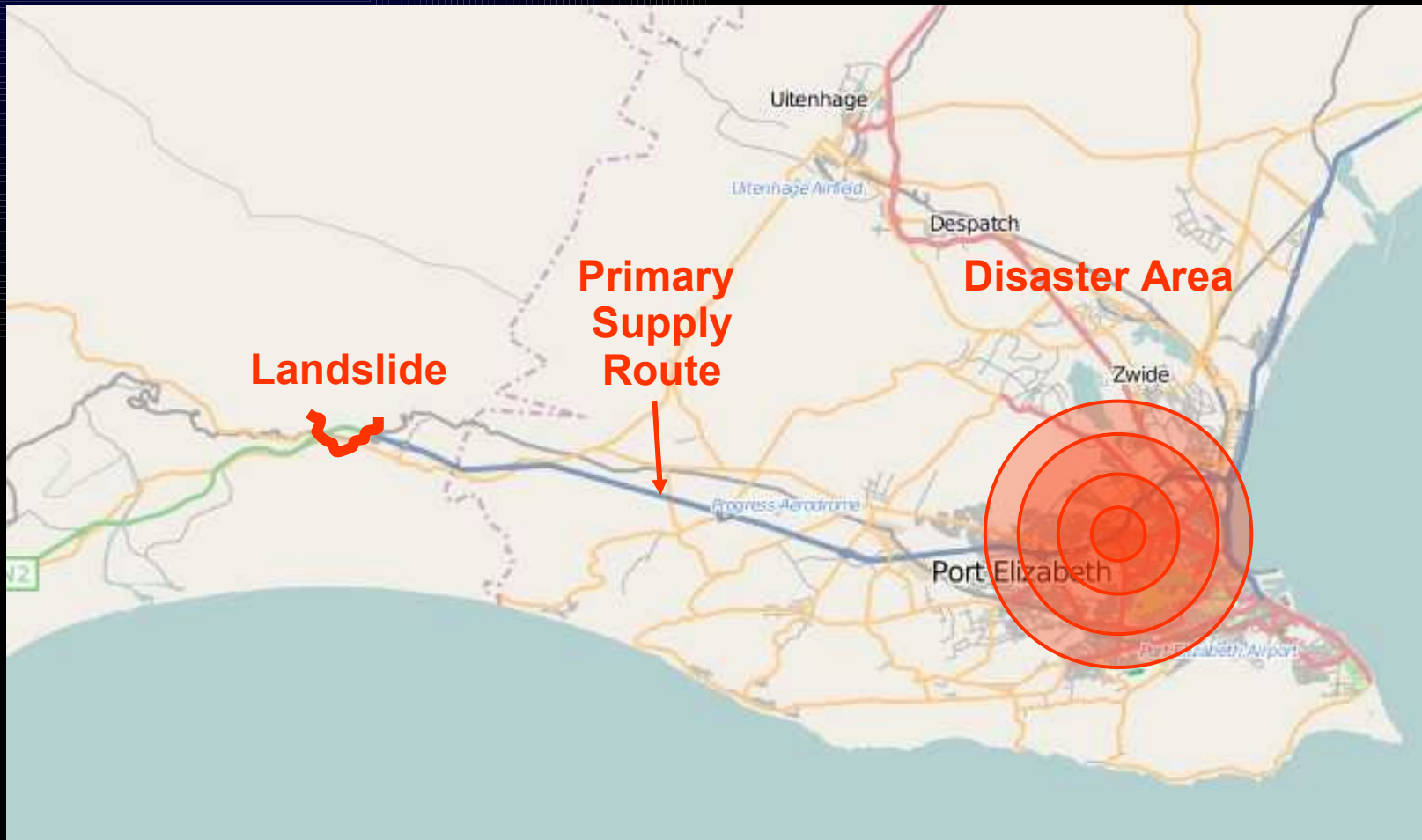
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EXAMPLE



Conclusion

- „Real-time“ satellite information can be used effectively in the Decision Support System.
- Using the satellite 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.

Conclusion

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Thank you for your attention.