The dissemination and fusion of geographical data to provide distributed decision making in a network-centric environment

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Network Enabled Capability

- Agile Mission Groups (AGM)

  - flexible   dynamic   rapid effects

- Delegated control

  - delegated decision making

  - integration and synchronisation of planning process

- Shared awareness

  - Situational Awareness

  - Commanders Intent

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Intelligence Data

- Intelligence Preparation of the Battlefield (IPB)

  – analysis of terrain & environment effects

  – potential courses of action/threat

- Targeting

    decide   detect   deliver   assess

- Decision Support Overlay (DSO)

  – combined intelligence & operations estimate

    targets   surveillance plan   decision points

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Disseminating Data

CI + IPB + DSO + STAP

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COA/threat/targeting/Surveillance

- Condensed into vector format

  Points   Lines   Polygons

- Base level of geographic data

Just another resource - like munitions or food!

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Geographical Support

- Specialist engineers

- Visualisation and querying of spatial data

  » Maps

  » Digital Elevation Models

  » Feature data and imagery

- Powerful analytical tools but requires specialised skills

- Analysis is separated from decision makers

- Deters problem solving or 'What if…' analysis

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Geospatial Decision Support

- To maximise the efficiency of decision making, decision makers require support with;

  » Computational Calculations

  » Scientific & Process Modelling

  » "What if…" 4D Time-Based Planning

- GIS sytems offer a suitable foundation for Decision Support Systems, but offer only limited functionality

Need specifically designed spatial systems for Decision-Makers not GIS experts

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Complex Spatial Problems

- C2 Decisions often contain semi-structured problems

- Structured - one clear solution ⟶ Automated problem solving

- Semi-structured
  - intuitive decision making
  - intangible elements
    - gaps in data
    - unknown threats   Impossible to model!
    - politics

No Solution - Have to attempt to Resolve the problem

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"What if…" Problem Solving

- A decision making environment that allows complex spatial problems to be resolved

- Contains models

  » sensor propagation

  » ballistics

  » 4D de-confliction

- Provides terrain analysis

  » line-of-sight

  » routing/going

- Allows multi-path planning

  » limitless "What if…" plans

  » concurrent and sequenced

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Software Demonstration

Questions?

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