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Configuring STK to Drive Operational and Concept Analysis

Arthur H. Brooks Jr.
L-3 Communications
Mission Integration Division
10001 Jack Finney Blvd
Greenville TX
(903) 457-3707

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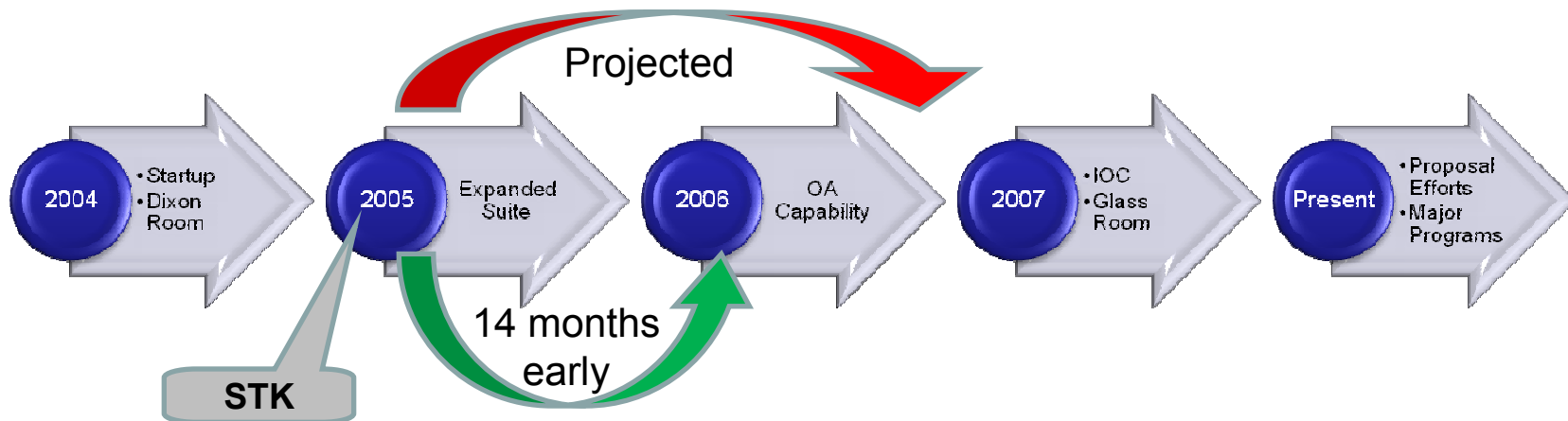


communications

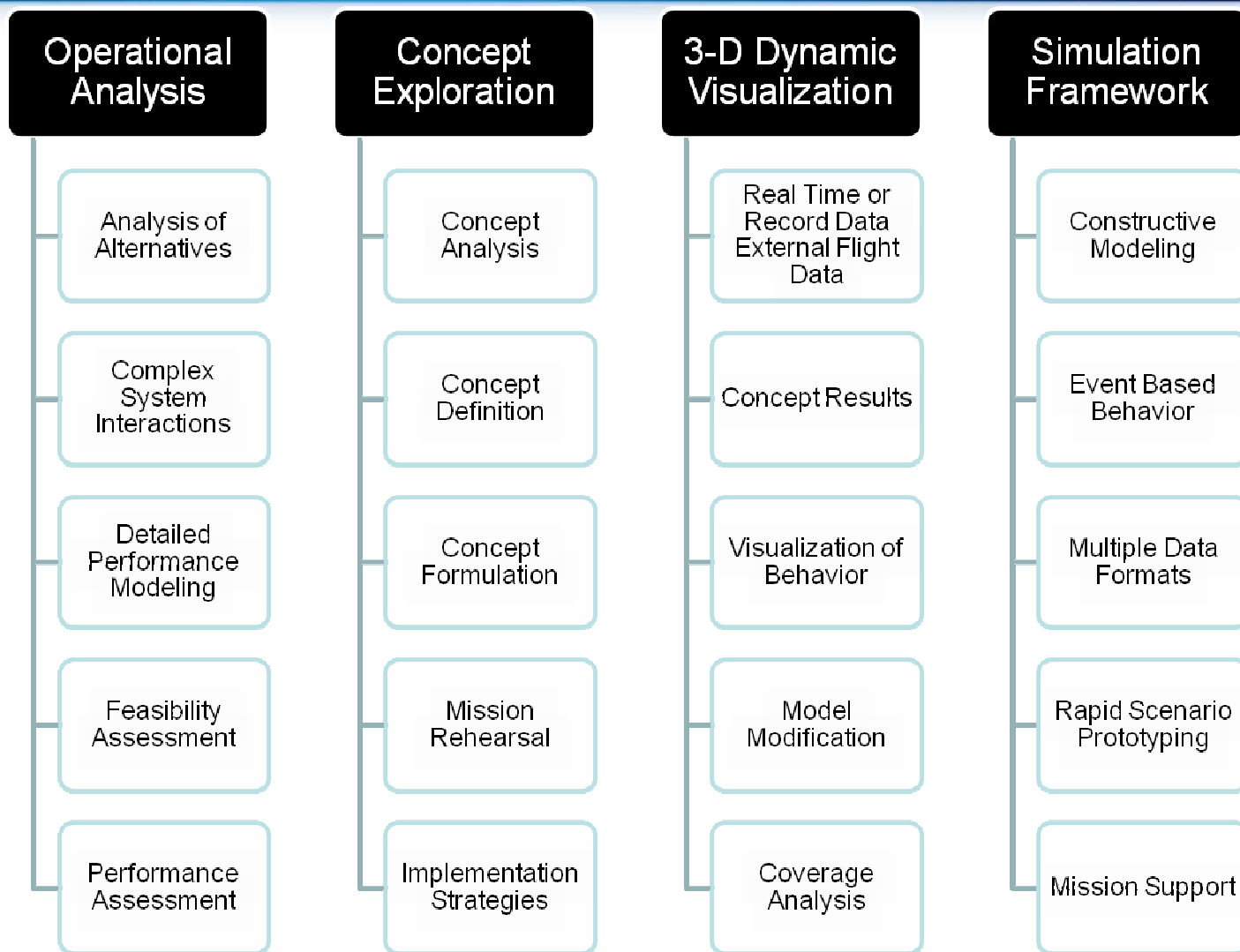
Integrated Systems

MSOA overview

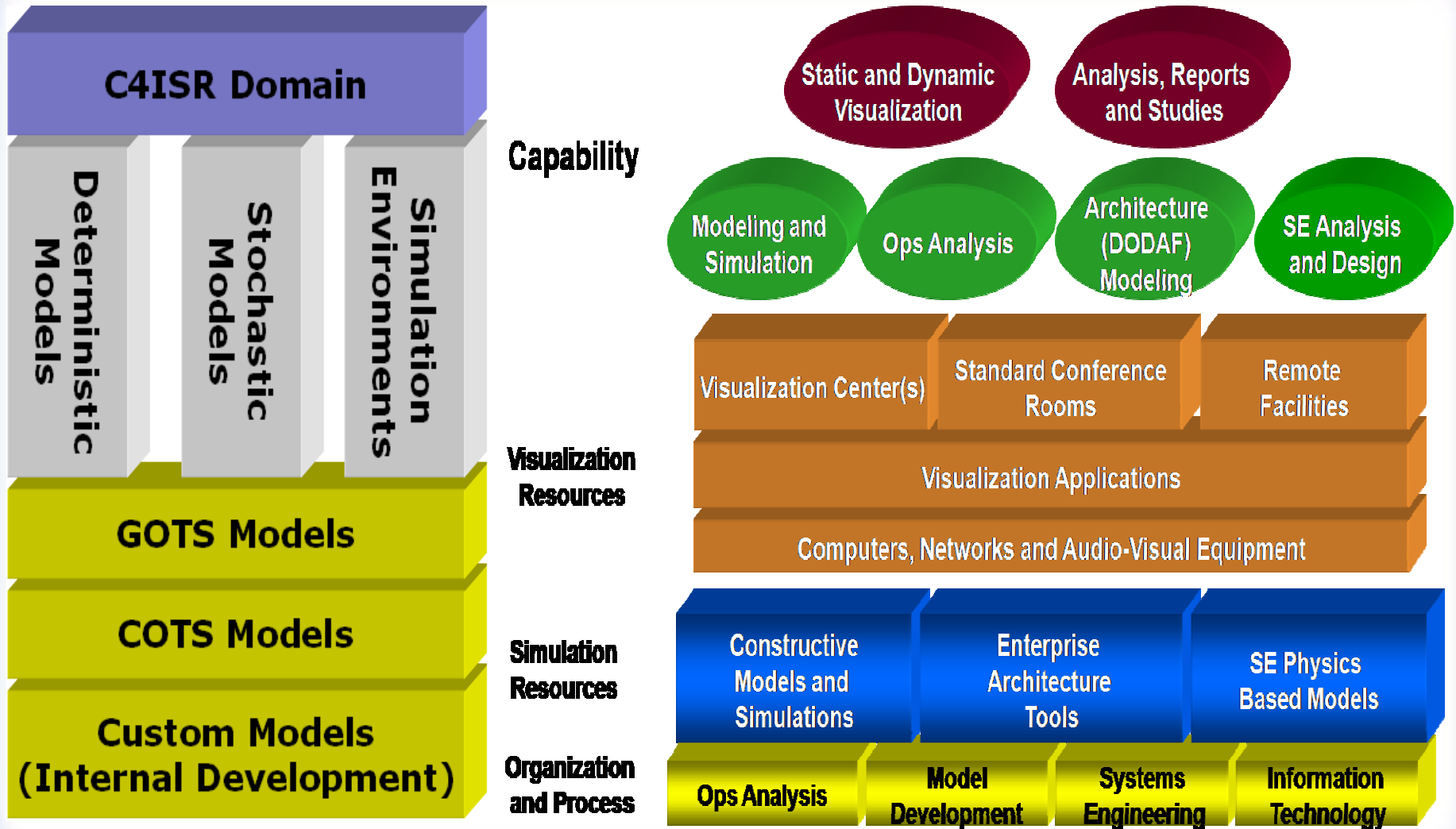
Provide Modeling Simulation and Operations Analysis (MSOA) products to support analysis and presentation of operational activities, system integrations, and design concepts.



MSOA objectives



MSOA architecture



Key problems addressed by AGI software

- **Multiple Business Areas = Multiple Solutions**
- **Modeling & Simulation within the C4ISR Domain**
- **Need for Rapid Prototyping**
- **Platform/Entity Control**
- **Sensor Performance**
- **Coverage Analysis**
- **Operations Effectiveness Analysis and Studies**
- **High Fidelity Static/Dynamic 2-D/3-D Visualization**

How AGI software is applied

Control (Interfaced) **Randomness** (Interfaced)

LINK

STK (Interfaced) **Expansion** (Interfaced) **Behavior** (Interfaced)

Reuse

Analytical/Quantitative Analysis Capability for concept exploration and communication

Customization

Visualization

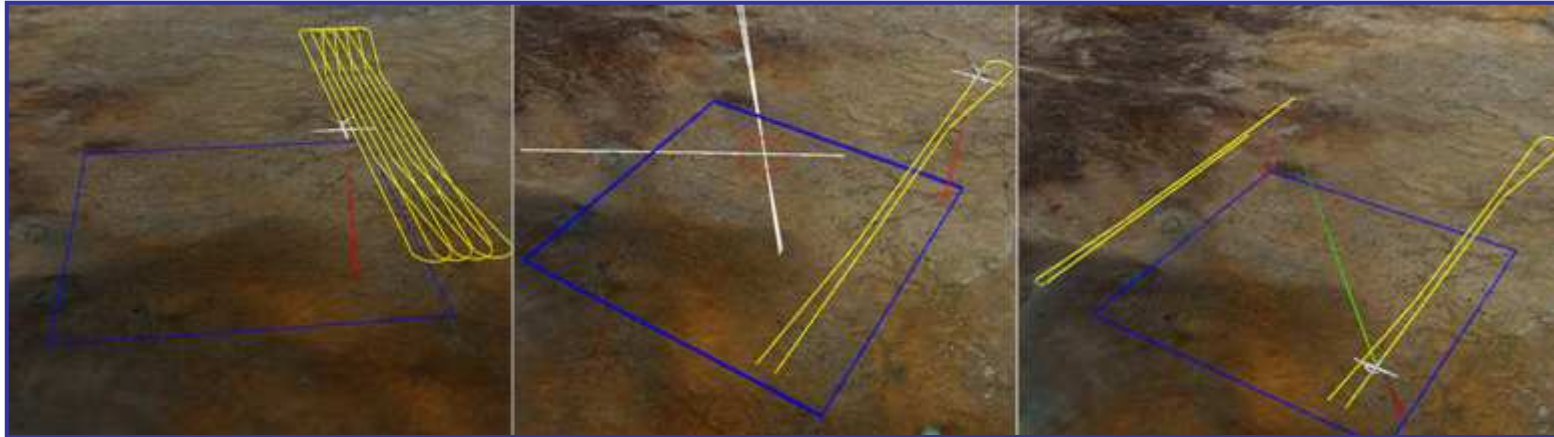
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1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Key technical attributes

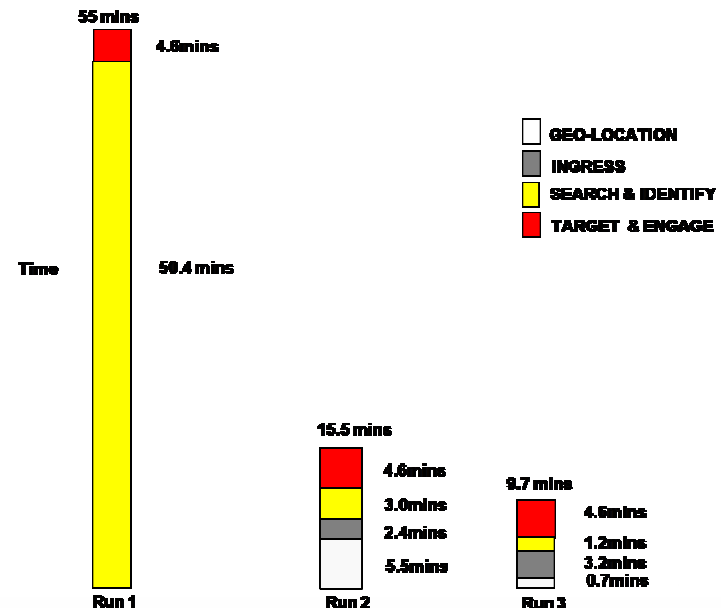
- **Aircraft Mission Modeler**
 - Placement Optimization
- **Communications Module**
 - Receiver/Transmitter Templates
 - Antenna Patterns
- **Coverage**
 - Line of sight along a flight path
 - Compute RF link values for a given receiver against a given transmitter for any given point
 - Display contours, static or dynamic, of RF link values

Example analysis using STK

Comparative concepts



- **Analysis of a 7nm x 7 nm area**
- **Conclusion:**
Search time reduced by 80%
via multi-sensor collaboration



MSOA outcome

■ Improved Techniques to Conduct Simulations

- Concept of operations of emerging technologies
- Effectiveness of new technologies
- Integration of new technology with existing platforms
- The integrity and feasibility of plans
- Mission planning tools - coordination and rehearsal

■ Lowered Cost/Time – More Effective Business Decisions

- Based on mathematic and physics principles
- Effective comparison tool
- Early validation of design alternatives
- Reduces hardware prototype cost & development time
- Rapid “What If” Tool – Cost/Technical Trades



Brings the Power of Visualization
Antenna Builder ■ ISRVIS ■ Optimizer ■ Randomizer

