DoDAF Implementation in Teamcenter Systems Engineering (TcSE)

Teamcenter Systems Engineering Services
Roy Mengot
UGS
roy.mengot@ugs.com
972-987-3280

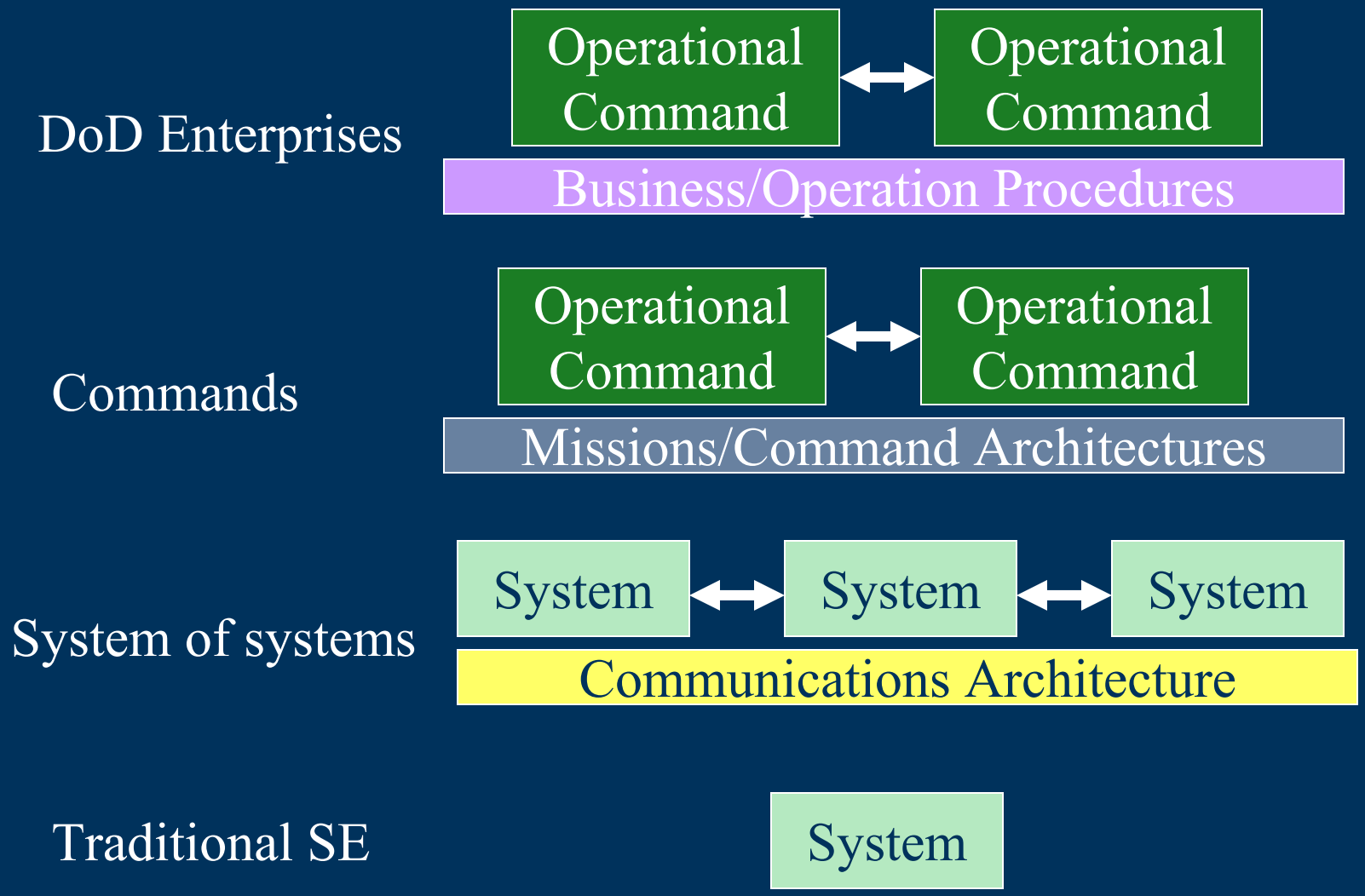
© UGS Corp. 2006. All rights reserved.

Topics

- Scope of DoDAF
- TcSE Support for DoDAF Processes
- Transition to TcSE Project Capture
- MS-Word Support in TcSE
- TcSE / MS-Visio support for DoDAF
- Creating DoDAF Data Elements
- MS-Excel Support in TcSE

© UGS Corp. 2006. All rights reserved.

Scope of DoDAF



© UGS Corp. 2006. All rights reserved.

TcSE Support for DoDAF Processes

- TcSE uses commonly known tools
  - Inherent requirements management / traceability
    - Look and feel of Windows
  - Graphical interface
    - MS-Visio stencils enabled for TcSE represent processes
  - Text interface
    - MS-Word is used to edit all text objects and Word formats
  - Table and data editing
    - MS-Excel supports data import/export and data extraction
- TcSE is process enabling, not process driving

© UGS Corp. 2006. All rights reserved.

Notional DoDAF Process

Architecting Process

- DoD Enterprises
- DoD Commands
- Mission Need
- Arch Concept Definition
- Arch Interfaces
- Arch Requirements
- System Requirements
- System Definition
- System Development

DoDAF Products

OV-1, OV-2, OV-3, OV-4, OV-5, OV-6, OV-7

TV-1, TV-2

SV-1, SV-2, SV-3, SV-4, SV-5, SV-6, SV-7, SV-8, SV-9, SV-10, SV-11

OV - Operational View
SV - System View
TV - Technical View

TcSE Support at all levels

Document Inputs

Traceability

Requirements Management

Enabled Stencils

Modeling Support

Word Object Formats

Architectures

© UGS Corp. 2006. All rights reserved.

TcSE Flexible Process Support

- Different SE levels require different processes
  - Each Visio stencil can be a different process
  - Stencil icons can be tied to TcSE object subtypes
- TcSE accommodates any of these processes
  - Visio stencils are easily adapted to a process
- Users use processes they know
  - No “bending” of processes to fit the tools
- Data is captured for export to documents
  - Simple MS-Word and MS-Excel templates
- Multiple organizations can merge multiple views of multiple architectures and cross-link

© UGS Corp. 2006. All rights reserved.

DoDAF Standard Products

DoDAF View	Suggested methods
OV1 - Operational Concept	Visio graphics, text, use cases
OV2 - Operational Node Connectivity	Structure diagram, data flow, UML Collaboration Diagrams
OV3 - Information Exchange	Tables extracted from OV-2/5 search, use Excel templates
OV4 - Org. Relationships	Visio graphics, IDEF0 node diagrams
OV5 - Operational Activity Model	Enabled Visio graphic, IDEF0 template, activity diagrams
OV6 - Operation states, rules	Enabled Visio state charts, sequence diagrams
OV7 - Logical data model	Enabled Visio graphic, ERD and UML structure diagram stencil

© UGS Corp. 2006. All rights reserved.

DoDAF Standard Products (Cont.)

DoDAF View	Suggested Methods
SV1 - Systems I/F Description	Enabled Visio structure diagram
SV2 - Systems Communications	Enabled Visio graphic, tables, UML structure diagram I/F
SV3 - Systems - Systems Matrix	TcL enabled Excel matrices
SV4 – Systems functionality	Enabled Visio graphic, Data Flow Diagram stencil
SV5 - Operational Activity Model	TcL enabled Excel matrices
SV6 – System Data Exchange	Export via search and Excel templates
SV7 - Logical data model	Excel Live output requirements and properties.

© UGS Corp. 2006. All rights reserved.

DoDAF Standard Products (Cont.)

DoDAF View	Suggested Methods
SV8 - Systems Evolution	Visio graphic, tables, text
SV9 - Systems Tech Forecast	Visio graphic, tables, text
SV10 - Systems Rules, States, Event Traces	Enabled Visio State Chart and Sequence Diagram stencils
SV11 – Physical Schema	UML Class Diagrams
AV1 - Overview and Summary	Enabled Visio graphic
AV2 - Integrated Dictionary	Tables, TcL enabled Excel, Word templates for object types
TV1 - Technical Stds Profile	Visio graphic, tables, text
TV2- Technical Stds Forecast	Visio graphic, tables, text

© UGS Corp. 2006. All rights reserved.

The Magic of Subtypes

Building blocks are like Lego's, they can represent anything

Physical object

Network Nodes

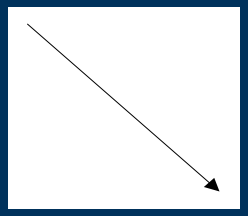
Functions

Organizations

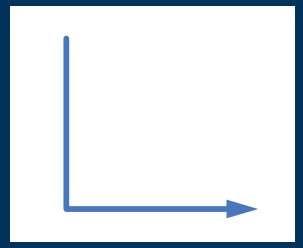
Data Structure

Platforms

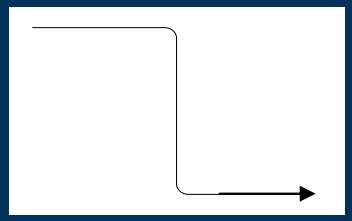
Trace links are equally versatile



Requirements Trace



Relationships



Logical flows

Physical connections

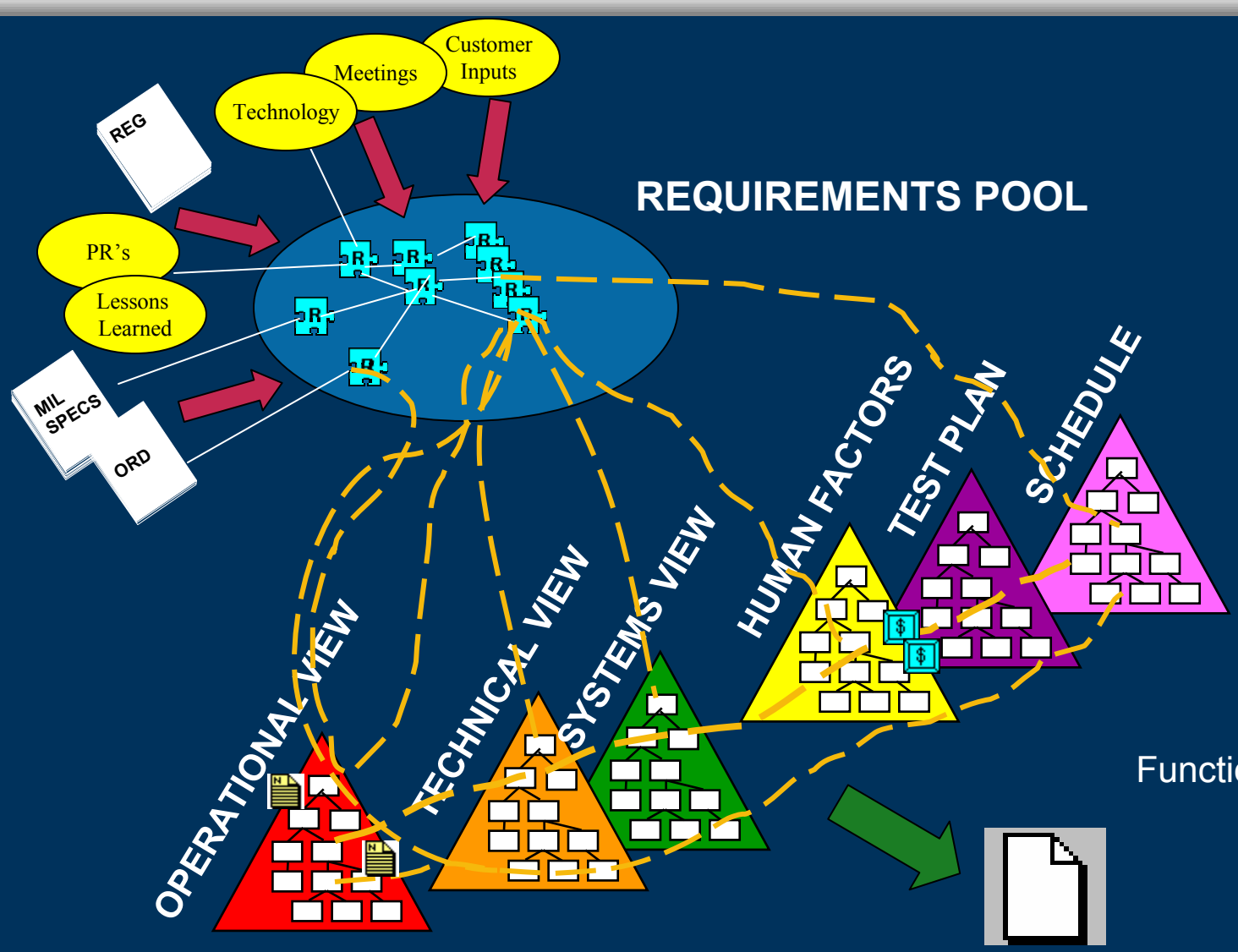
Each subtype can have unique, user defined properties

Each subtype can have a unique icon

The search engine can key only on requested subtypes

© UGS Corp. 2006. All rights reserved.

SE Process: TcSE Applied



Products :
ICD
Functional Block Diagrams
Matrices
DODAF Views
Etc.

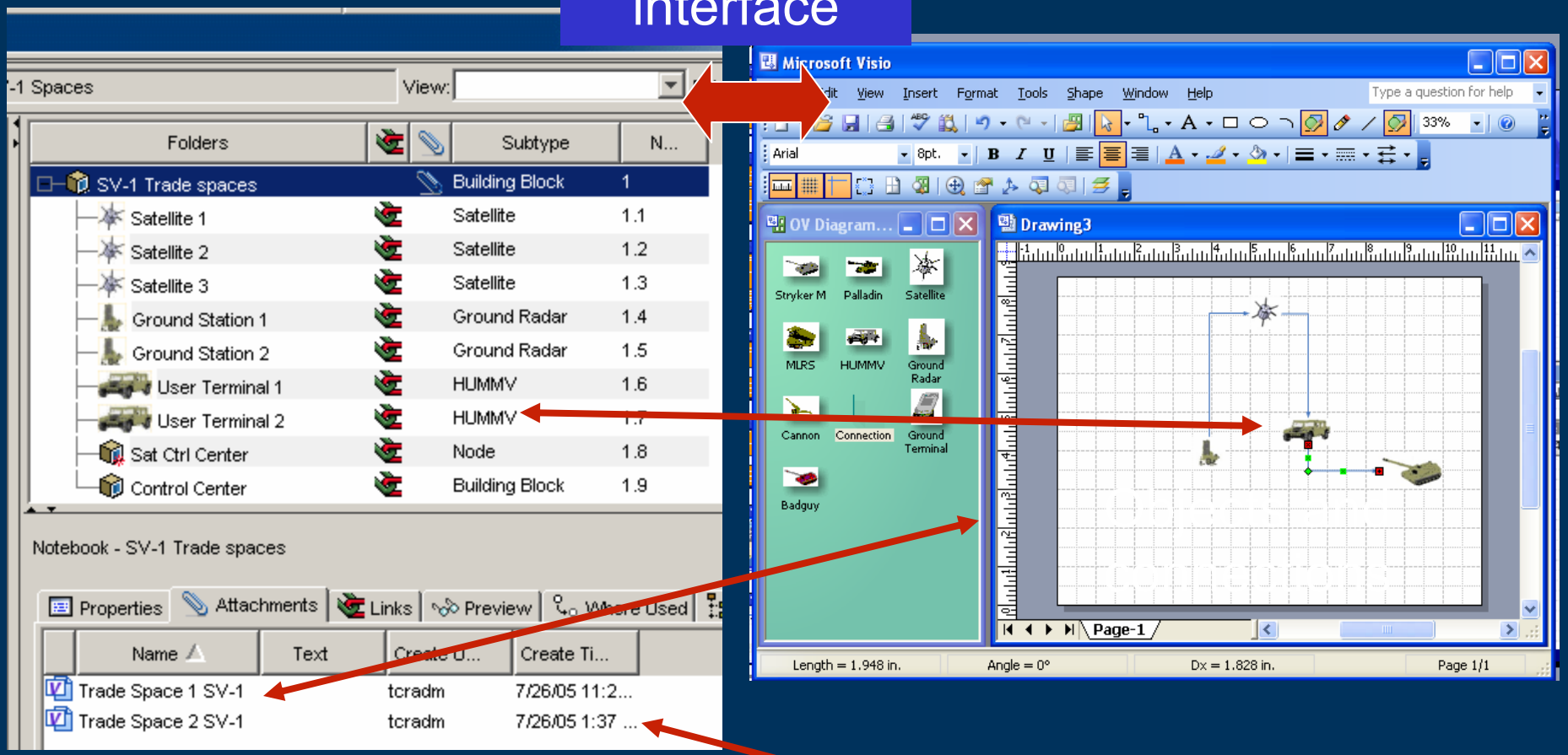
© UGS Corp. 2006. All rights reserved.

Visio – TcSE – Word Interactive interfaces

TcSE

Interactive interface

MS-Visio

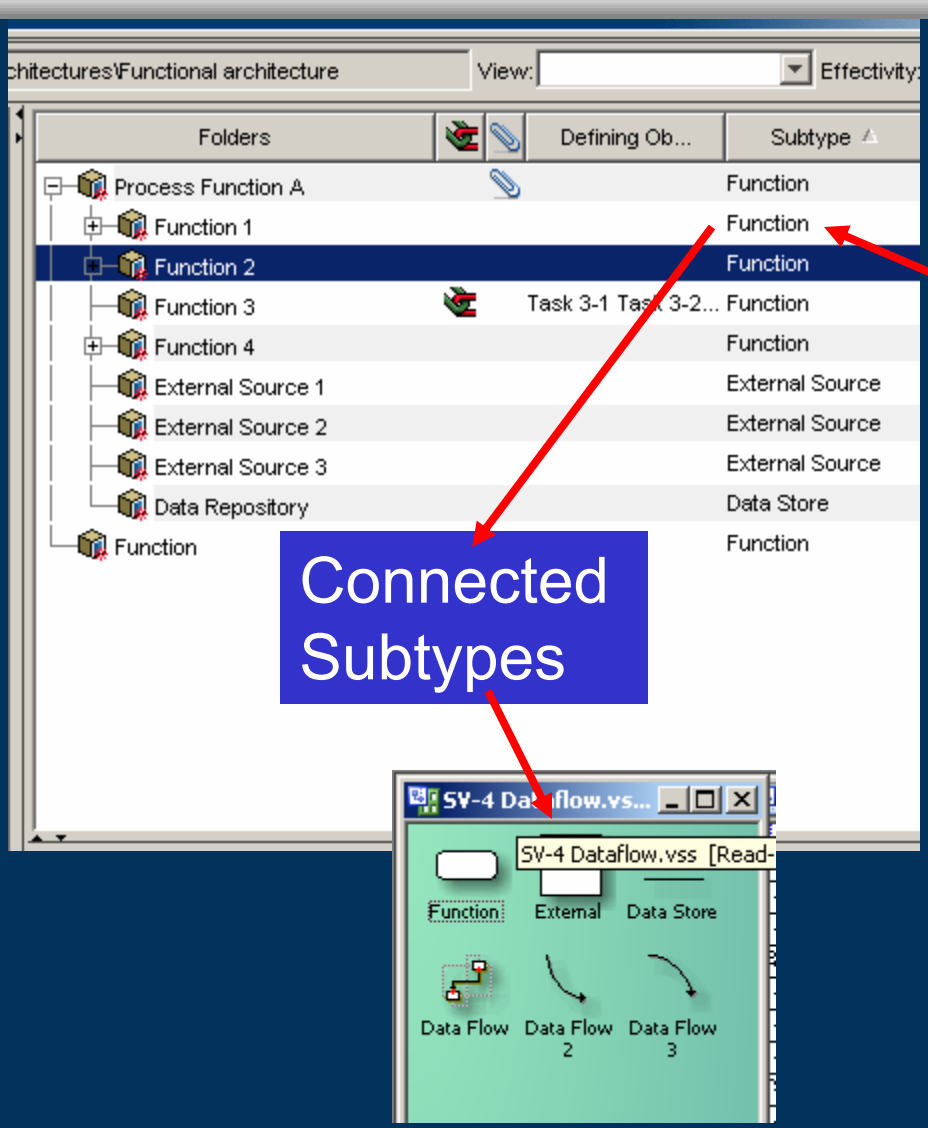


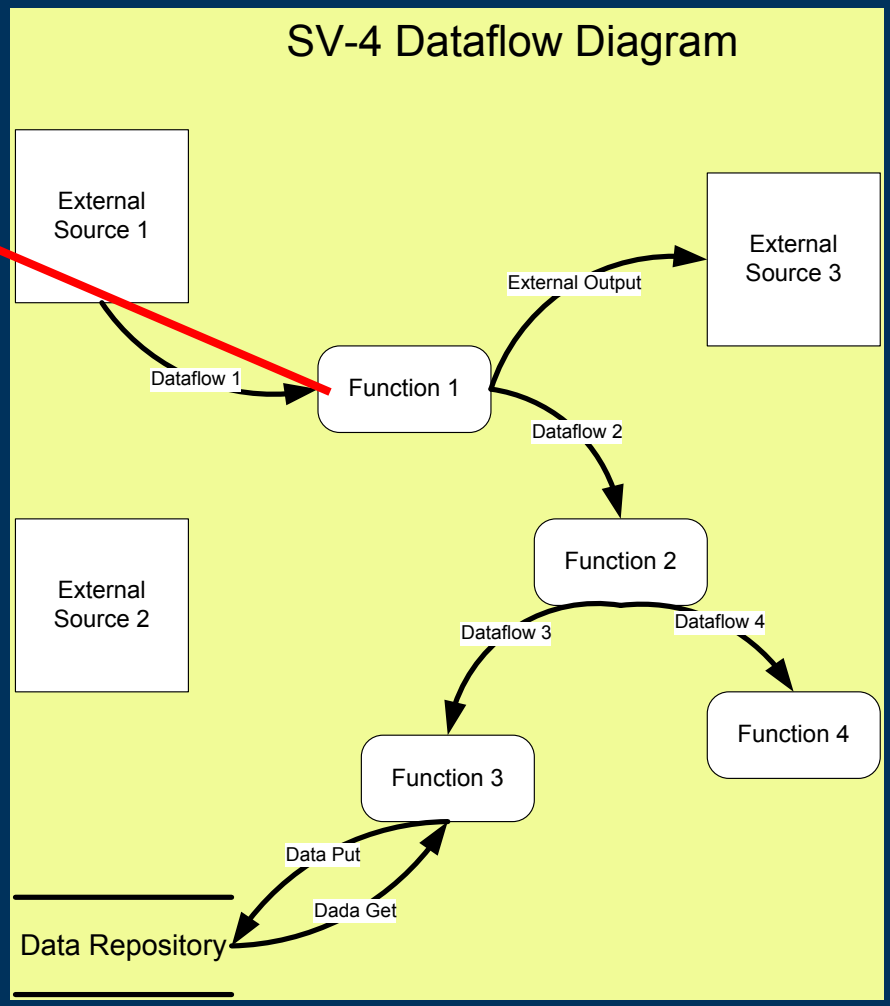
Saved Drawings

Auto-update in MS-Word

© UGS Corp. 2006. All rights reserved.

SV-2 Dataflow with TcSE Stencil





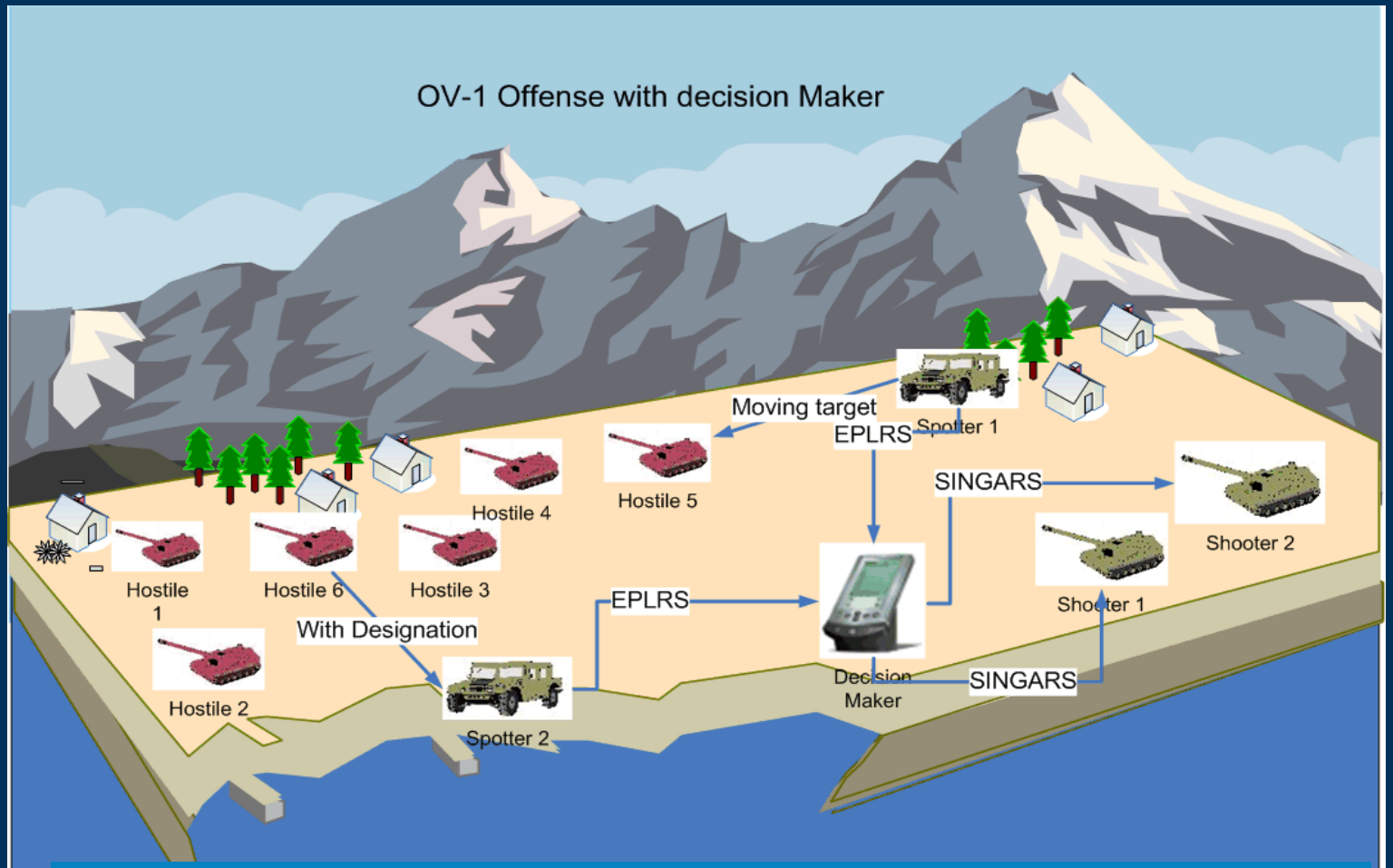
© UGS Corp. 2006. All rights reserved.

TcSE / Visio support for DoDAF

- Graphical objects in DoDAF products (e.g. OV-5, SV-1, SV-4 etc.) can be converted into objects in the TcSE database via the Visio interface
- Export TcSE enabled objects to MS-Visio diagrams
- Capture Visio connections and objects in TcSE
- Export summaries of requirements and architectures using TcSE to MS-Excel interface
- Export data dictionaries drawn in MS-Visio to MS-Word
- Manage trace links between requirements, architecture objects, and supporting documentation

© UGS Corp. 2006. All rights reserved.

High Level Operational Concept Graphic (SV-1)



Shapes in this Visio diagram are interactive with the objects in the TcSE Architecture in the next slide.

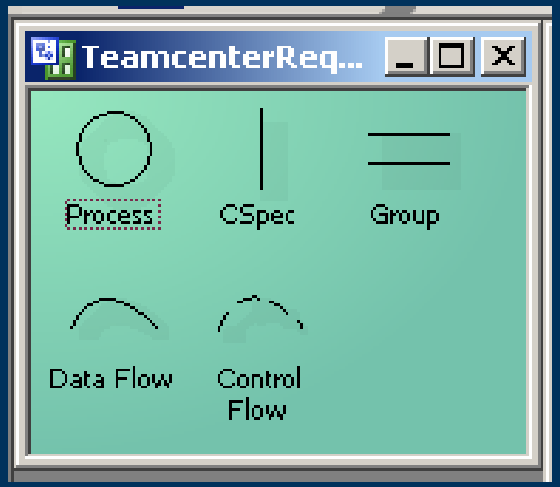
© UGS Corp. 2006. All rights reserved.

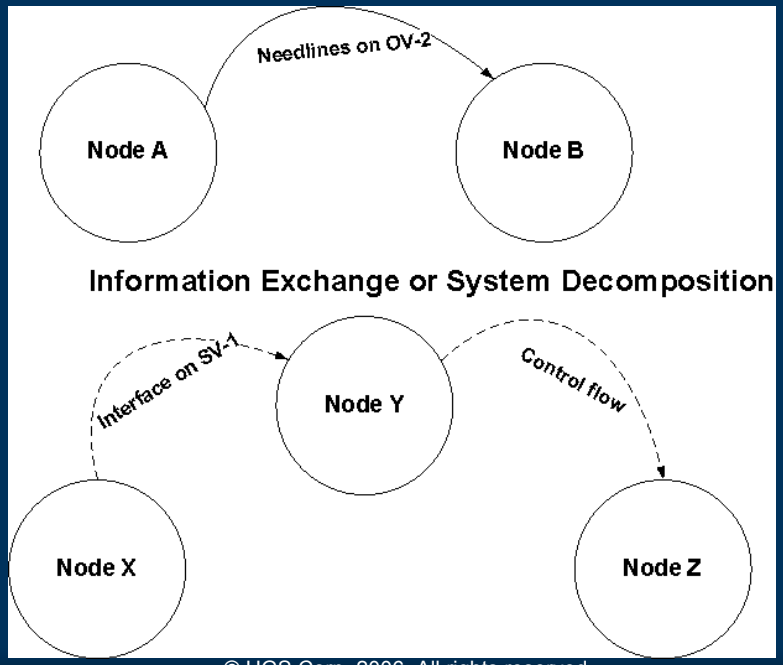
Architectural approaches

- A) Organize the architecture in TcSE first using the building blocks
  - Create a hierarchy, set properties
  - Then Export to Visio to add connections
- B) Start in MS-Visio and work graphically
  - Enabled Visio stencils create the objects in TcSE
  - Properties can be modified in MS-Visio
- TcSE supports either approach

© UGS Corp. 2006. All rights reserved.

Data Control Flow diagrams





Data_Control_Flow_Stencil.vss

Object Types - Subtypes

- Building Block - Process
- Building Block – Group
- Building Block – CSpec

Connection Types - Subtypes

- Connection – Data Flow
- Connection – Control Flow

Add custom TcSE enabled Icons

Can be used for:

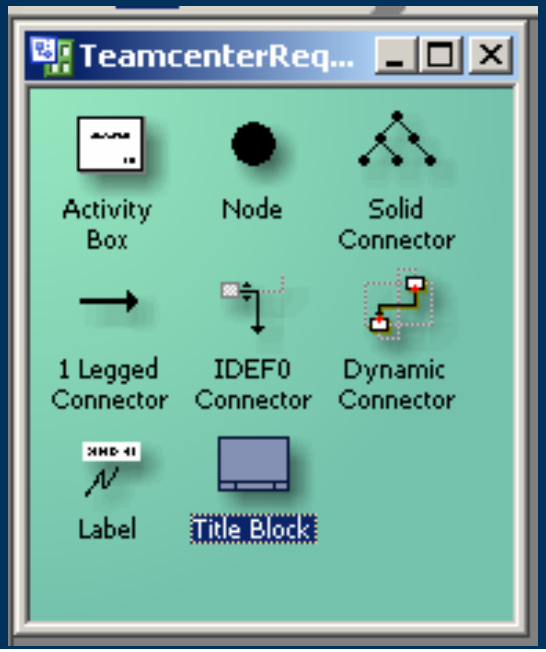
OV-1 High Lever Operational View

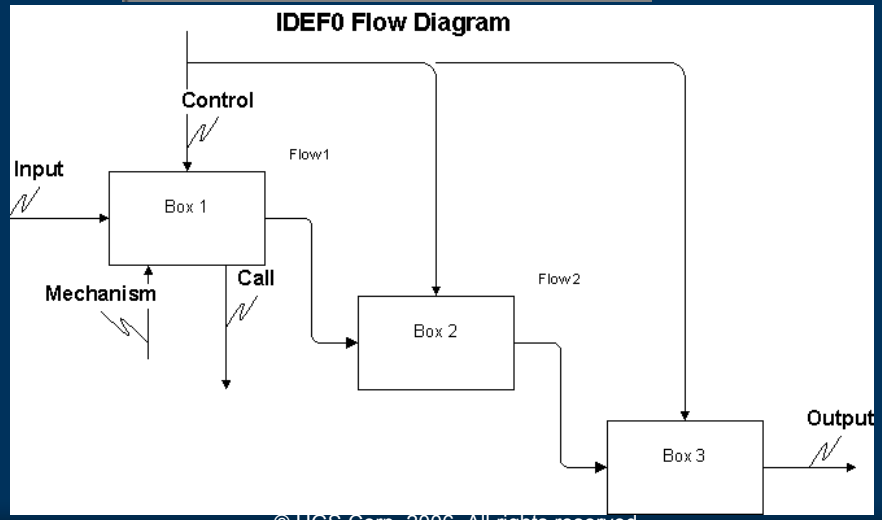
OV-2 Product Elements (Needlines / Interfaces)

SV-4 System Functionality Descriptions

© UGS Corp. 2006. All rights reserved.

IDEF0 Diagrams





TcR_IDEF0_Diagram_Stencil.vss

Object Types - Subtypes

- Building Block – Activity
- Building Block – Node
- Title Box - not TcR enabled (Simple border)

Connection Types - Subtypes

- Connection – 1 Legged Connector
- Connection – Solid Connector
- Trace Link – IDEF0 Connector
- Trace Link – Dynamic connector
- Label - not TcR enabled

Can be used for:

OV-1 High Lever Operational View

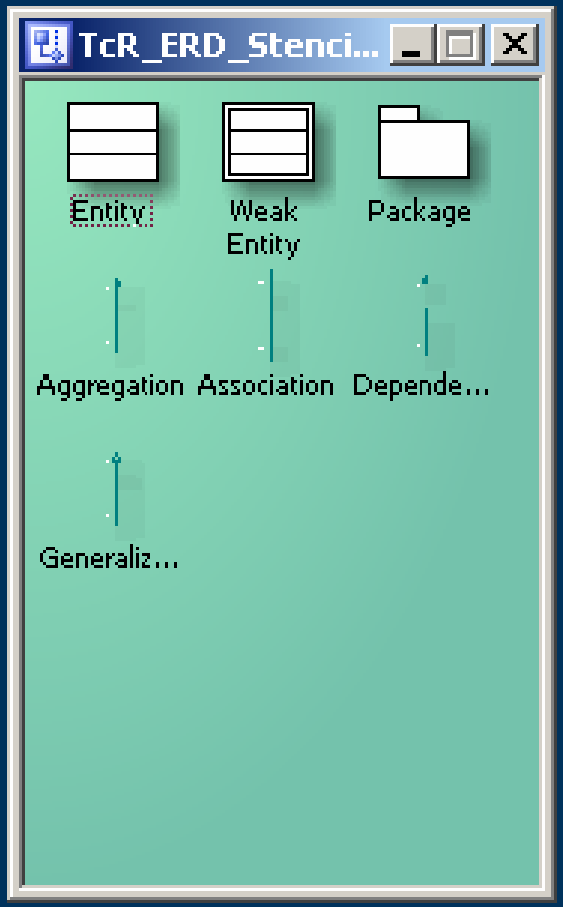
OV-2 operational Node Connectivity

OV-4 Organizational relationship Chart

OV-5 Operational Activity model

© UGS Corp. 2006. All rights reserved.

Entity Relationship Diagrams



TcR_ERD_Diagram_Stencil.vss

Object Types - Subtypes

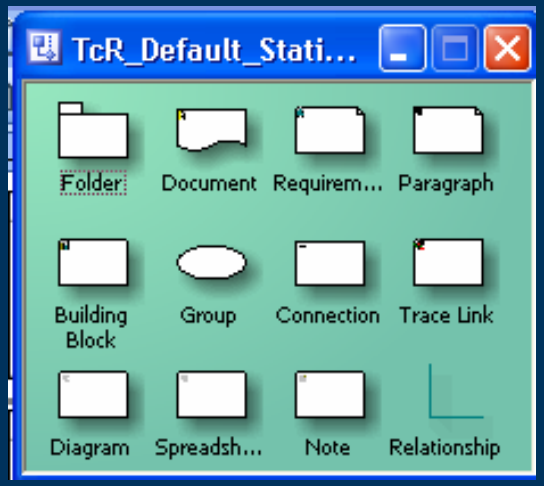
- Building Block – Entity
- Week Entity - not TcR enabled
- Building Block – Node

Connection Types - Subtypes

- Connection – Aggregation *
- Connection – Association *
- Connection – Dependency *
- Connection – Generalization *
- * = Multiple arrow styles

© UGS Corp. 2006. All rights reserved.

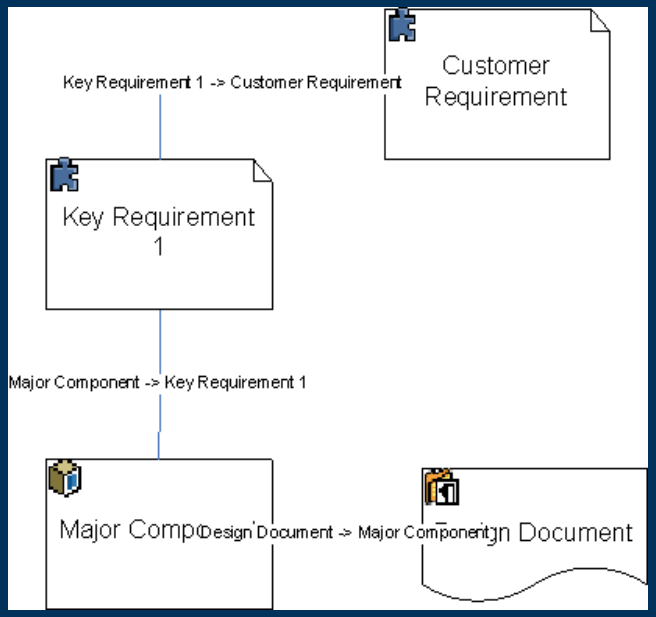
Default Stencil



Default Stencil.vss

All base type objects as indicated

Relationships creates trace links



Used for:

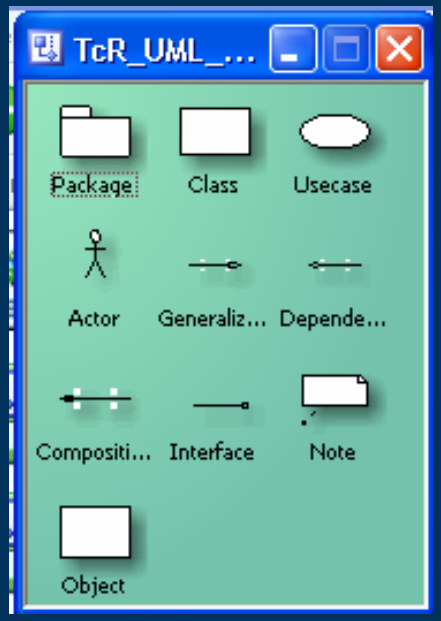
Small organizational data charts

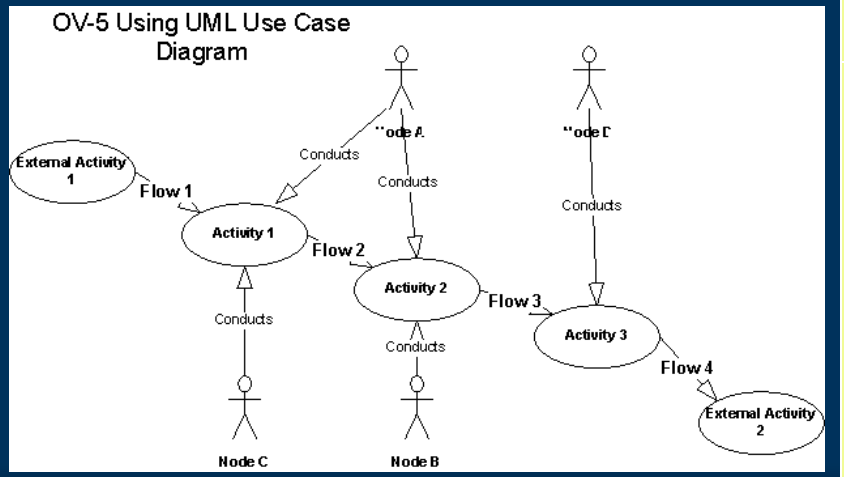
Document flow of traceability

SySML Requirements View Diagram

© UGS Corp. 2006. All rights reserved.

UML Stencil





TcR_UML_Visio_Stencil.vss

Object Types - Subtypes

- **Package is incompatible type**
- **Building Block – Class**
- **Building Block – Usecase**
- **Building Block – Actor**

Connection Types - Subtypes

- **Connection – Generalization ***
- **Connection – Dependency ***
- **Connection – Composition ***
- *** = Multiple arrow styles**
- **Connection – Interface**
- **Note - not TcR enabled**

Used for:

OV-4 Organizational relationships

OV-5 Operational Activity Models

OV-6 Activity Diagram

OV-7 Class Diagram

SV – Use Case, Class Diagrams

Sv-11 Class Diagrams

© UGS Corp. 2006. All rights reserved.

TcSE Enabled Existing stencils

Mili_tcr_std252b.vss

Object Types - Subtypes

Modified as desired

Used for desired ways to communicate system and operational workings graphically

© UGS Corp. 2006. All rights reserved.

User Created stencils

User_created.vss

An .xml file is modified to assign TcSE mapping to object subtypes

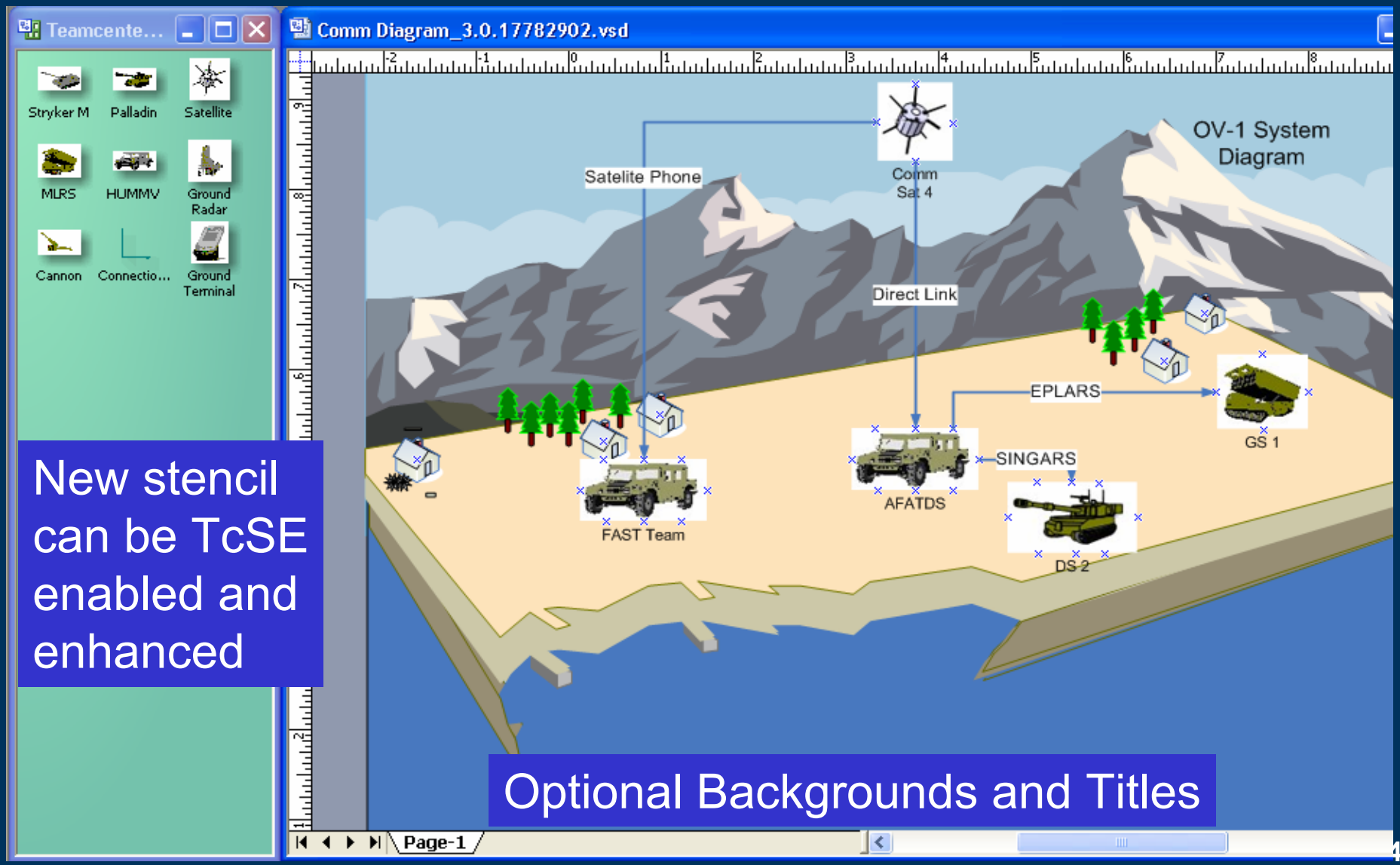
Object Types - Subtypes

Created in the Admin area as desired with additional user defined properties.

Used for desired ways to communicate system and operational workings graphically

© UGS Corp. 2006. All rights reserved.

Visio with the user Defined Stencil



New stencil can be TcSE enabled and enhanced

Optional Backgrounds and Titles

© UGS Corp. 2006. All rights reserved.

TcSE Entity and Connection Objects

Entities Captured as Objects

Connection Objects From Visio

Address: \\DoDAF Example\Architectures\Communications I/F

View:

Effectivity: Cu

Projects
- DoDAF Example
  - Architectures
    - Air Coord Diagram
    - Communications I/F
    - Data Dictionary
    - Data_Ctl Di
    - OV Diagram
    - SysML
    - System Interfaces
    - System Overview
    - System2
    - Tactical Overview
    - Task Breakdown
    - TcR Types
    - Top view
    - UML View OV-4
    - UML View OV-5
  - Documents
  - Requirements
  - SV-1 Spaces
- Piper Cherokee 20 Sep 20
- Piper CherokeeOct 05
- Test
- Titanic
- UML Trials
- Recycle Bin

Folders		N...	Subtype
SV-3 Chart		1	Building Block
Satellite		1.1	Satellite
Artillery		1.2	Artillery
FSCOORD		1.3	HUMMV
Stryker M		1.4	Stryker M
Forward Radar		1.5	Ground Radar
Palladin 1		1.6	Palladin
MLRS 1		1.7	MLRS

Notebook - Satellite

Properties | Attachments

Trace | Relations

Start

Nar	Name

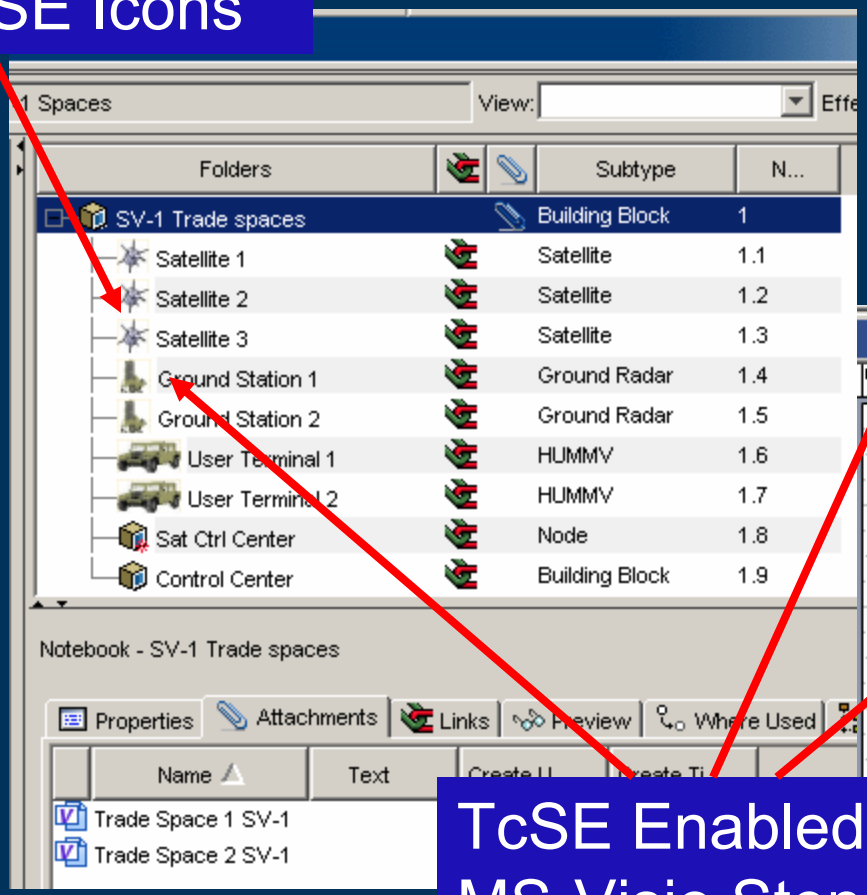
End

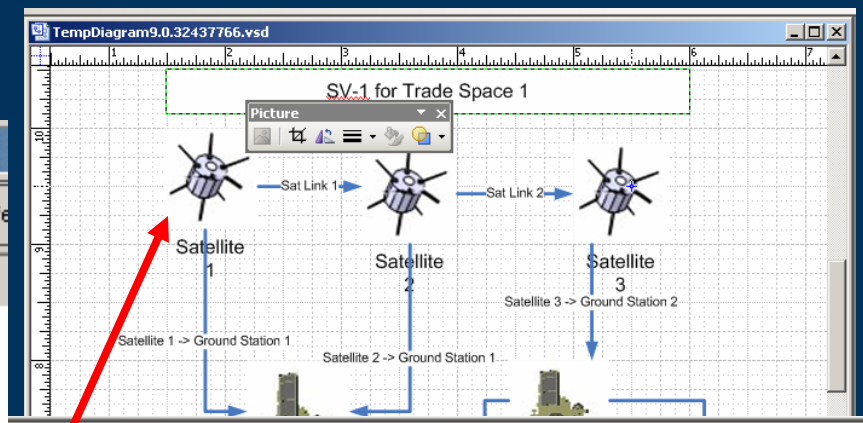
Name	Create U...	Create Ti
Forward Ra...	tcradm	9/6/05 10:
FSCOORD	tcradm	9/6/05 10:
Area FSCOO...	tcradm	9/6/05 10:

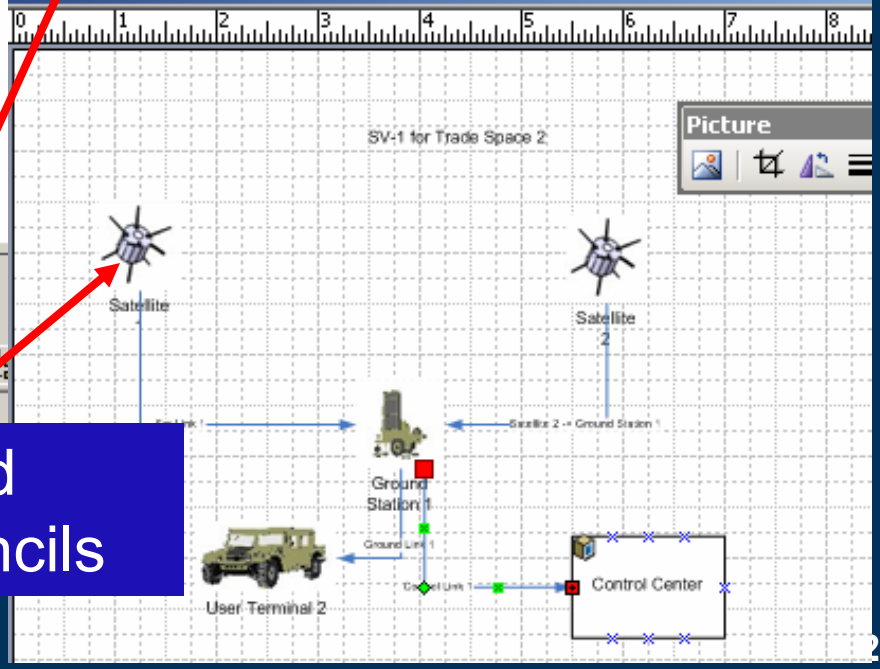
© UGS Corp. 2006. All rights reserved.

SV-1 Objects in TcSE / MS-Visio Diagrams

User Defined TcSE Icons







TcSE Enabled MS-Visio Stencils

© UGS Corp. 2006. All rights reserved.

Navigable Traceability Paths

Current object

Connections flow within architectures

Trace link path upward

Trace link path Downward

Folders | Type Name | Subtype

F0 Diagrams		Folder	Folder
IDEF0 Flow		Folder	Folder
Diagram Block	1	Building Block	Building Block
Act Box 1	1.1	Building Block	Activity
Act Box 2	1.2	Building Block	Activity

Notebook - Box 1

Properties | Attachments | Links | Preview | Where Used | Versions

Defining Trace	...	Cr
Act Guiding Standard		tcradi
Requirement 1	0019	tcradi
Architecture Standard A	0018	tcradi

Complying Trace	...	Create...	
Act Box 6		tcradm	2/7/0
Act Box 4.1		tcradm	3/3/0
Act Box 4.3		tcradm	3/3/0
Act Box 4.2		tcradm	3/3/0
Act Activity		tcradm	3/6/0
Act Box 4.2		tcradm	3/3/0
Act Box 4.1		tcradm	3/3/0
Act Box 4.3		tcradm	3/3/0
Act Box 4.2		tcradm	3/3/0
Act Activity		tcradm	3/6/0
Act Box 4.2		tcradm	3/3/0
Act Box 4.2		tcradm	3/3/0
Test Plan 1	0020	tcradm	3/15
Test Procedure 1	0021	tcradm	3/15
Test results 1	0022	tcradm	3/15

Trace | Relations

© UGS Corp. 2006. All rights reserved.

MS-Word Support in TcSE

- All text objects are edited in MS-Word
  - Requirements, document paragraphs, notes, templates
- Text objects can contain any MS-Word construct
  - Tables, graphics, special characters, hyperlinks Text objects (of mixed subtypes) are hierarchic
- Each document folder may have a style sheet
  - When viewed, text objects always appear in final print form
- Existing MS-Word documents load easily into TcSE
- Users have more control over document export
  - Optional user defined formats for ***any*** object subtypes

© UGS Corp. 2006. All rights reserved.

Example Document

Word Para #

Address: \\Demo\Documentation

Effectivity: Current Version

Projects
- Demo
  - Decompositions
  - Documentation
    - DOD
  - Requirements
- DoDAF Class
- DoDAF Demo
- DoDAF Example
- DoDAF Sales Pitch
- JSCOM
- Piper Cherokee 20 Sep 20(
- Piper CherokeeOct 05
- Test
- Titanic
- UML Trials
- Recycle Bin

Folders		ROIN	Type Na...	Subtype
DOD			Folder	Folder
INITIAL CAPABILITIES DOCUMENT	1	1441	Requirement	Paragraph
INITIAL CAPABILITIES DOCUM	1.1	1442	Requirement	Requirement
Joint Functional Area	1.1.1	1443	Requirement	Requirement
Concept of Operations S	1.1.3	1445	Requirement	Requirement
Capability Gap	1.1.4	1446	Requirement	Requirement
a.	1.1.4.1	1447	Requirement	Requirement
b.	1.1.4.2	1448	Requirement	Requirement
c.	1.1.4.3	1449	Requirement	Requirement
Rule 1.	1.1.4.3.1	1450	Requirement	Requirement
Rule 2.	1.1.4.3.2	1451	Requirement	Requirement
d.	1.1.4.4	1452	Requirement	Requirement
Threat/Operational Envirc	1.1.5	1453	Requirement	Requirement
a.	1.1.5.1	1454	Requirement	Requirement

Notebook - Concept of Operations Summary

Properties | Attachments | Links | Preview | Where Used | Versions

Concept of Operations Summary

Describe what mission areas this capability contributes to, what operational outcomes i
what affects it must produce to achieve those outcomes, how it compliments the integra
warfighting force and what enabling capabilities are required to achieve its desired oper
outcomes.

Text Preview

© UGS Corp. 2006. All rights reserved.

Creating DoDAF Data Elements

- For many OV and SV views, data elements are defined building blocks or connections between them
- The data element attributes can be defined as TcSE *properties*, which are assigned to the *subtype*
- Use TcSE building block versions of these data elements in architectures and MS-Visio diagrams
- The search engine can help assemble data dictionaries for export to MS-Word
- Data dictionaries may be generated with user defined MS-Word *templates* for each *subtype*

© UGS Corp. 2006. All rights reserved.

Data Element Definitions

Create Subtype called <Platform>

Add Property Description*

Available Properties Dialog Box

Administration

Projects
- DoDAF Example
  - Activators
  - Property Defini
  - Reports and Fo
  - Security Profile
  - Type Definition
  - Users
- UML Trials

Types/SubTypes	Type Name	Subtype
CADM Block	User Type Definition	User Type Definition
Operational Architecture	User Type Definition	User Type Definition
Stryker M	User Type Definition	User Type Definition
FSCOORD	User Type Definition	User Type Definition
Palladin	User Type Definition	Use
MLRS	User Type Definition	Use
Artillery	User Type Definition	Use
Ground Radar	User Type Definition	Use
HUMMV	User Type Definition	Use
Satellite	User Type Definition	Use
Ground terminal	User Type Definition	Use
Trains	User Type Definition	Use
Gun Ship	User Type Definition	Use
B2 Bomber	User Type Definition	Use
System Architecture	User Type Definition	Use
Technical Architecture	User Type Definition	Use
Depot	User Type Definition	Use
Spy Sat	User Type Definition	Use
Object	User Type Definition	Use

Multi-Choice

- [ ] Architecture Name
- [ ] Architecture Objective Text
- [ ] Attributes
- [x] Baseline
- [ ] Begin.Multiplicity
- [ ] Caliber
- [ ] Channels
- [ ] Control Method
- [ ] Data Value
- [ ] Description*
- [x] Echelon
- [ ] End.Multiplicity
- [ ] Frequency
- [ ] LightWeight Properties
- [ ] Packages
- [ ] Routing Status
- [ ] Security
- [x] Service
- [ ] Shared State

Select All

Unselect All

OK Cancel

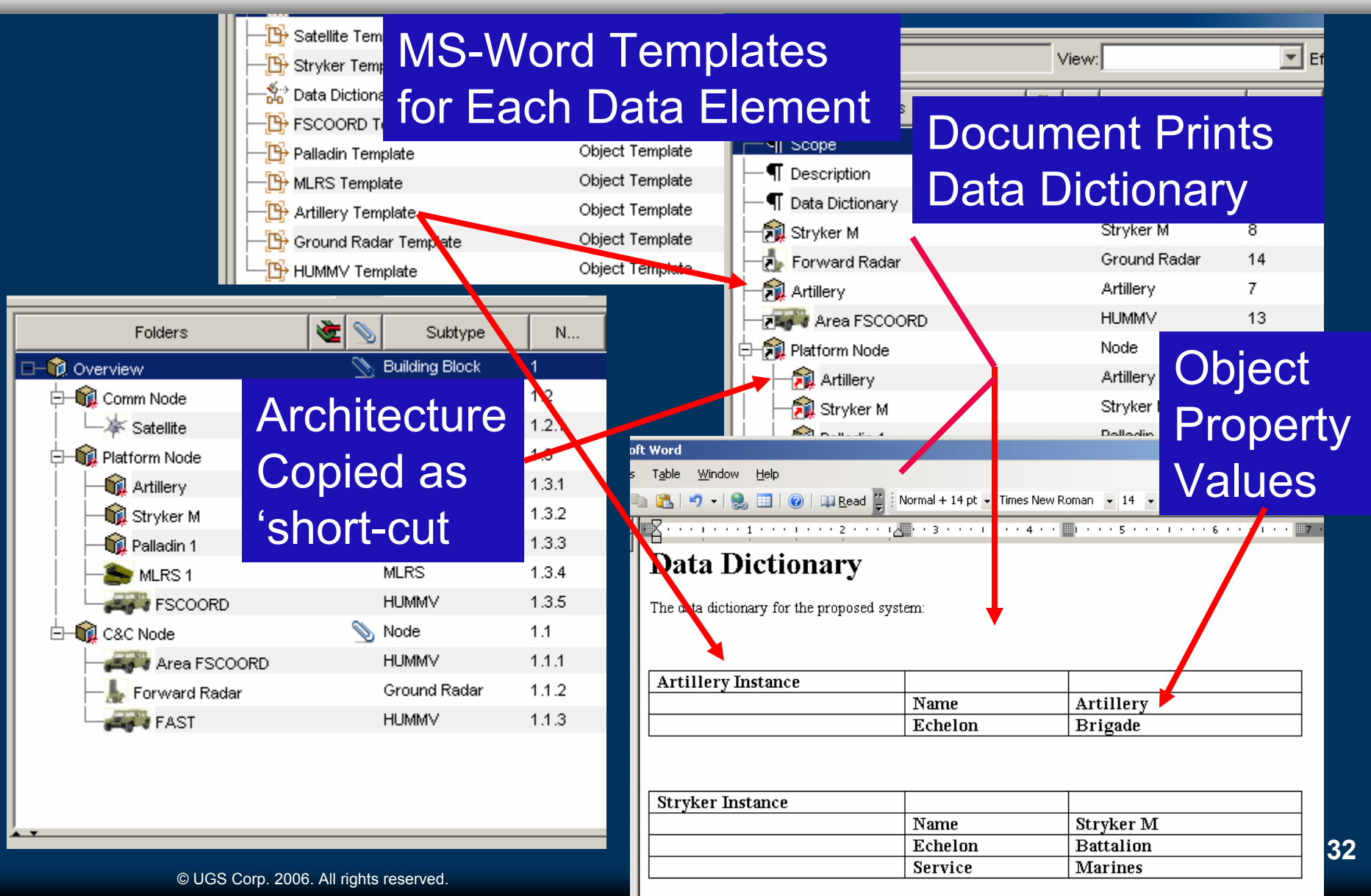
Notebook - HUMMV

Propertie | Where Used

New	Value
	DoDAF Example
	Baseline,Version Type,Echelon,Service
Served By	

© UGS Corp. 2006. All rights reserved.

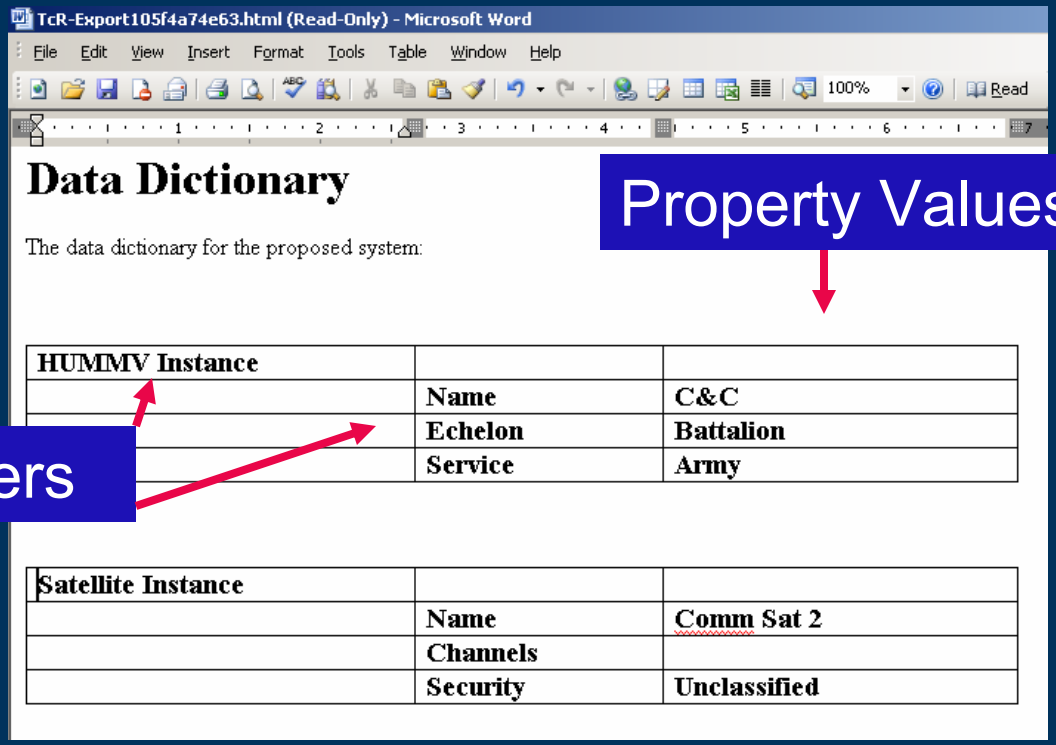
Turn-key Data Dictionary Generation



© UGS Corp. 2006. All rights reserved.

Output Document

- The predefined MS-Word Templates for each sub-type format the element property values in the prescribed data structure format.



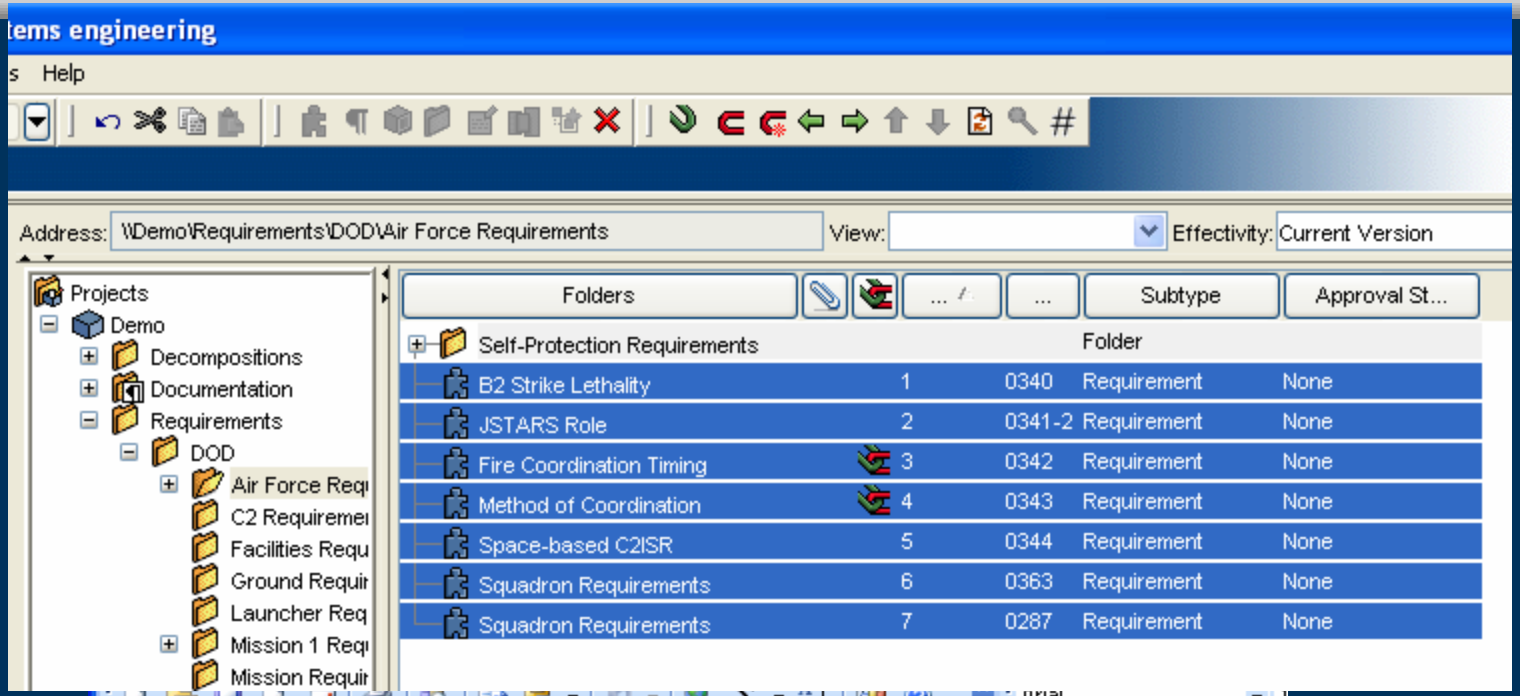
© UGS Corp. 2006. All rights reserved.

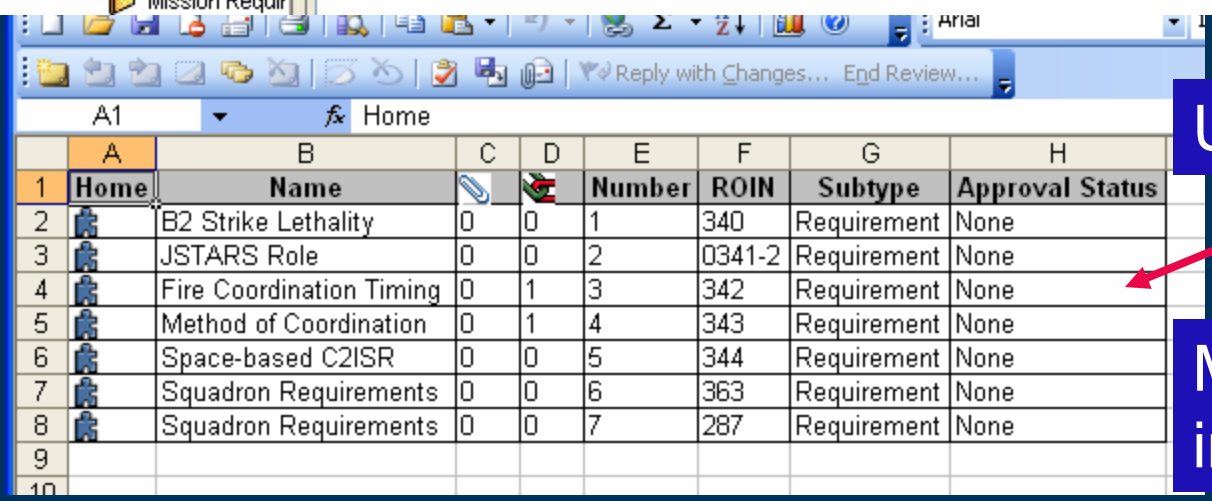
MS-Excel Support in TcSE

- MS-Excel is used two ways in TcSE
  - Select objects and properties for exported to MS-Excel
    - Set up the content window and create summaries of requirements, architectures, etc.
  - MS-Excel templates combine search and formatting
    - If objects of a certain subtype are found in the search, here's how I want them to appear in MS-Excel
    - TcL can enhance this capability
  - MS-Excel *Live* allows further work offline

© UGS Corp. 2006. All rights reserved.

TcSE Exports to MS-Excel





Update it offline

Merge it back in the DB later

© UGS Corp. 2006. All rights reserved.

MS-Excel Templates

- MS-Excel templates combine search and format

Output Header

Microsoft Excel - 3.0.17782264_Spreadsheet.mhtml

File Edit View Insert Format Tools Data Window Help

B4 {%Activator%Relation_Matrix%Task 1-1}

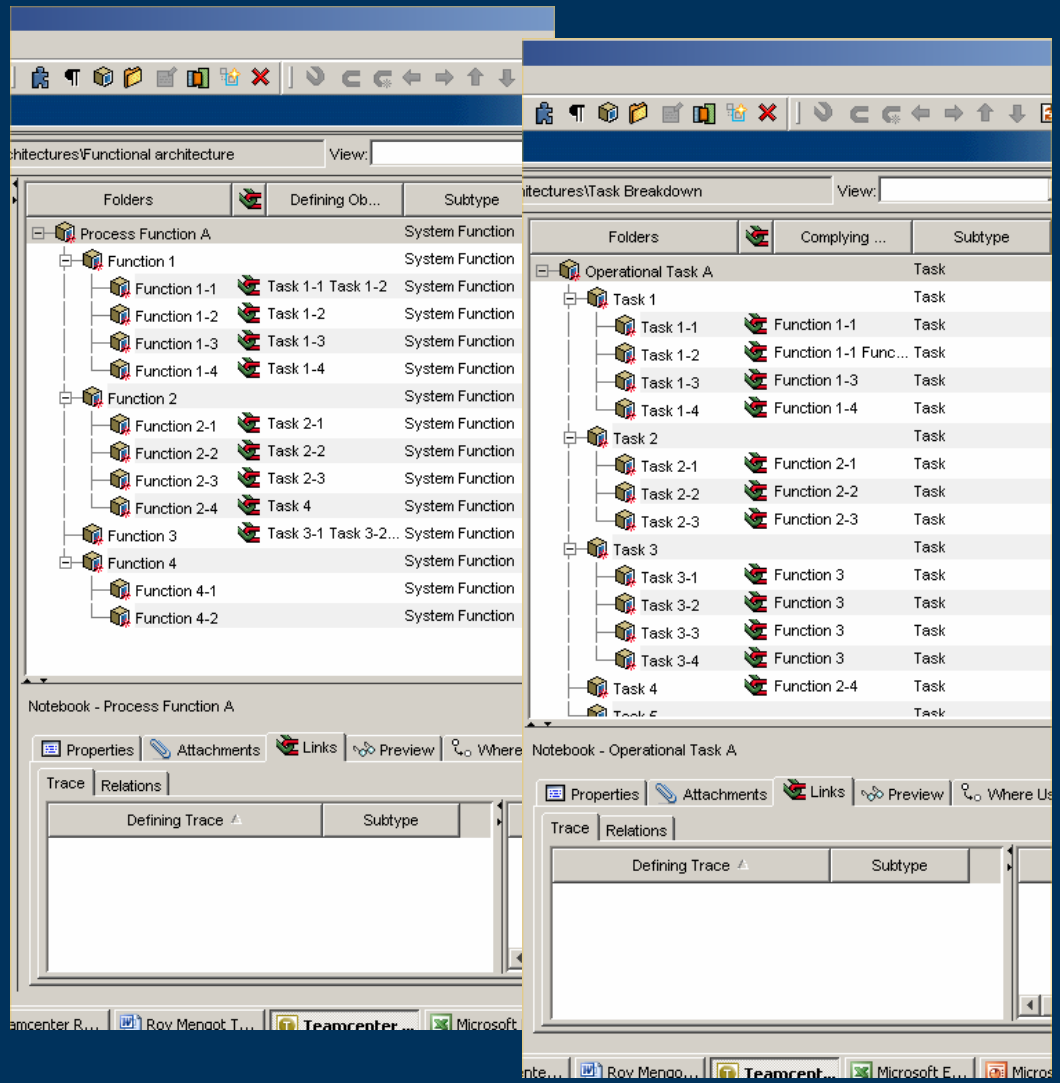
	A	B	C	D	E	F	G	H
1					TcRequirements			
2	Folder	Task 1-1	Task 1-2	Task 1-3	Task 1-4	Task 2-1	Task 2-2	Task 2-3
3	<start>			{Before the this tag every thing will be considered as Header information/Constant n				
4	{%Name}	{%Activator%Relation_Matrix%Task 1-1}	{%Activator%Relation_Matrix%Task 1-2}	{%Activator%Relation_Matrix%Task 1-3}	{%Activator%Relation_Matrix%Task 1-4}	{%Activator%Relation_Matrix%Task 2-1}	{%Activator%Relation_Matrix%Task 2-2}	{%Activator%Relation_Matrix%Task 2-3} {%at
5	<end>			{Below the end tag every thing will be considered as Footer information/Constant no				
6								
7								

Desired Properties

Optional TcL calls

© UGS Corp. 2006. All rights reserved.

Operational Task to System Function Mapping (SV-5)



For the condition where Operational Tasks determine needed System Services, the defining Trace Links locate the “X” in the Trace Matrix (Next Slide).

The data is captured in a TcSE table and exported to MS-Word or to MS-Excel via the built-in TcSE MS interface tools.

© UGS Corp. 2006. All rights reserved.

SV-5 from TcSE Trace Links

Microsoft Excel - TcR-9.0.1079454711135439.html [Read-Only]

	A	B	C	D	E	F	G	H	I	J	K
1		TcRequirements									
2	Folder	Task 1-1	Task 1-2	Task 1-3	Task 1-4	Task 2-1	Task 2-2	Task 2-3	Task 3-1	Task 3-2	Task 3-3
3	Process Function A										
4	Function 1										
5	Function 1-1	X	X								
6	Function 1-2		X								
7	Function 1-3			X							
8	Function 1-4				X						
9	Function 2										
10	Function 2-1					X					
11	Function 2-2						X				
12	Function 2-3							X			
13	Function 2-4										
14	Function 3								X	X	X
15	Function 4										
16	Function 4-1										
17	Function 4-2										

Sample System Function Traceability Matrix (SV-5)

Extracting Interfaces Example

Many Architectures

Many Interfaces

Address: \\DoDAF Class\Architectures\AV 1 Overview Summary

View:

Projects
- AADL Demo
- AV 1 Overview Su
  - Defense Scen
  - Offense Scen
  - Offense Scen
  - Functional architec
  - Mission Example
  - OV-5 IDEF0
  - Task Breakdown
  - Trade Study1
  - Trade Study2
- Documents
- Requirements
- DoDAF Demo
- DoDAF Example
- Piper Cherokee 20 Sep 20(
- Piper CherokeeJan 06
- Piper CherokeeOct 05
- Test
- Titanic
- UML Trials
- Recycle Bin

Folders	...	Type Name	Subtype
Spotter 2	4	Building Block	HUMMV
Decision Maker	5	Building Block	Ground Terminal
Hostile 1	6	Building Block	Badguy
Hostile 2	7	Building Block	Badguy
Hostile 3	8	Building Block	Badguy
Hostile 4	9	Building Block	Badguy
Offense Scenario 2		Folder	Folder
Spotter 1	1	Building Block	HUMMV
Spotter 2	2	Building Block	HUMMV
Commander	3	Building Block	HUMMV
Shooter 1	4	Building Block	Stryker M
Shooter 2	5	Building Block	Stryker M
Hostile 1	6	Building Block	Badguy
Hostile 2	7	Building Block	Badguy

Notebook - Spotter 2

Properties | Attachments | Links | Preview | Where Used | Versions

Start

Name	Create U...	Create Ti...
Hostile 1	tcradm	1/23/06 1:11 ...
Decision Mak...	tcradm	1/23/06 1:11 ...

End

Name	Subtype	Create U...
Sensor LOS	Connection	tcradm
FAST Net	Connection	tcradm

© UGS Corp. 2006. All rights reserved.

Search / MS-Excel Template

Export search results via MS-Excel template for properties and format information

Search Results (1) - 11 Items Found

File Edit View Tools Help

Folders	Name	Band Width	Complying Obje
Designate LOS	Designate LOS	Voice only	Hostile 2
CF Net	CF Net	Voice only	Decision Maker
Sensor LOS	Sensor LOS	Voice only	Hostile 1
FAST Net	FAST Net	Voice only	Decision Maker
Arty Net	Arty Net	Voice only	Shooter 2
Net	Net	Voice only	Shooter 1
EPLRS	EPLRS	Voice only	Shooter 2
SINGARS	SINGARS	Voice only	Commander
Spotter 1 -> Commander	Spotter 1 -> Comm...	Voice only	Commander

B3 fx

	A	B	C	D	E	F	G	H	I	J
1				Table of Interfaces						
2	Interface Name	Band Type	Message Source	Message Destination	I/F Direction	Type				
3	<start>			{Before the this tag every thing will be consider			<rule>	Level	Relationship	Subtype
4	{%Name}	{%Band Width}	{%Defining Objects}	{%Complying Objects}	{%Direction}	{%Type Name}	<rule>			%S-Connection
5	<end>			{Below the end tag every thing will be considered as Footer information/Constant non TcR information}						
6										
7	This Excel template can be applied to the results window of a search after doing a search for connections in Visio drawings.									
8	Begin a search using the script below in the folder below the folders containing all the Visio drawings. The script should be composed in the Advanced search wi									
9										
10	Select Building Blocks									
11		For each Building Block								
12		Add connections								
13	Remove Building Blocks									
14										

© UGS Corp. 2006. All rights reserved.

Resulting Formatted Interface Table

Reply with Changes... End Review...

A15 | This Excel template can be applied to the results window of a search af

	A	B	C	D	E	F
1					**Table of Interfaces**	
2	**Interface Name**	**Band Width**	**Message Source**	**Message Destination**	**I/F Direction**	**Type**
3	Designate LOS	Voice only	Spotter 1	Hostile 2	Uni-Directional	Connection
4	CF Net	Voice only	Spotter 1	Decision Maker	Bi-Directional	Connection
5	Sensor LOS	Voice only	Spotter 2	Hostile 1	Uni-Directional	Connection
6	FAST Net	Voice only	Spotter 2	Decision Maker	Uni-Directional	Connection
7	Arty Net	Voice only	Decision Maker	Shooter 2	Bi-Directional	Connection
8	Net	Voice only	Decision Maker	Shooter 1	Bi-Directional	Connection
9	EPLRS	Voice only	Spotter 1	Shooter 2	Uni-Directional	Connection
10	SINGARS	Voice only	Spotter 1	Commander	Uni-Directional	Connection
11	Spotter 1 -> Commander	Voice only	Spotter 1	Commander	Uni-Directional	Connection
12	EPLRS	Voice only	Spotter 2	Shooter 1	Uni-Directional	Connection
13	SINGARS	Voice only	Spotter 2	Commander	Uni-Directional	Connection

© UGS Corp. 2006. All rights reserved.

Cross Architecture Mapping

- Some architectures are co-dependent on other architectures
- Multiple architectures may be defined in the TcSE database as separate projects
- Cross project trace links can be used to show relationships between architectures
- Searches on these trace links are a means of demonstrating compliance

© UGS Corp. 2006. All rights reserved.

UGS DoDAF Support

- Provide DoDAF Application Workshop
  - How-to Instruction
  - Hands On Exercises
  - DoDAF Schema Starter Kit Included
    - MS-Visio Stencils
    - MS-Excel Templates
    - MS-Word Templates
    - Search scripts/utilities
    - User Cookbooks
- Tailorable to customer wants and needs

© UGS Corp. 2006. All rights reserved.

Summary

- TcSE is a capable and competitive SE tool
- Easy import of DoDAF artifacts
- Constructs allow for manipulation of requirements and architecture
- Many DoDAF compliant tables, data dictionaries, and diagrams can be directly exported from TcSE
- Designers can do most of the creative system design graphically while TcSE automates much of the product generation

© UGS Corp. 2006. All rights reserved.

Discussion

© UGS Corp. 2006. All rights reserved.

UGS

The PLM Company

www.ugs.com

© UGS Corp. 2006. All rights reserved.