

The Knowledge Bridge between Operational and Training within the Army:

Knowledge reuse as a key factor of success.

Dr. Pierrette Champoux

Fujitsu Consulting

Dr. Kimiz Dalkir

McGill University



Agenda

- Introduction
- Knowledge Bridge Model
- Knowledge Management System
- Use Cases
- Conclusion

Introduction: Problem Context

- Limited Knowledge Sharing between organizations
- Knowledge redundancy and inconsistencies
- No common repository for easy access
- Lessons Learned mainly focused on Operational aspects
- No official mechanism to manage Feedback

CF/DND Corporate Knowledge

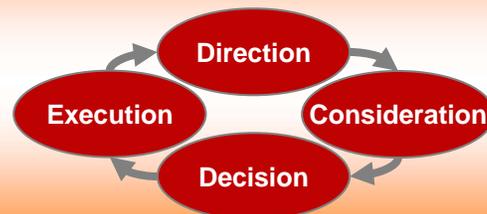
Doctrine

Training

Systems
e.g. LCSS

Operational Knowledge (domestic or international)

Battle Procedure
↕
Decision-Action Cycle



CF/DND Corporate Knowledge

Doctrine

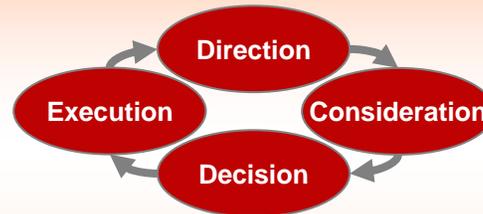
Training

Systems
e.g. LCSS

Knowledge Bridge

Operational Knowledge (domestic or international)

Battle Procedure
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CF/DND Corporate Knowledge

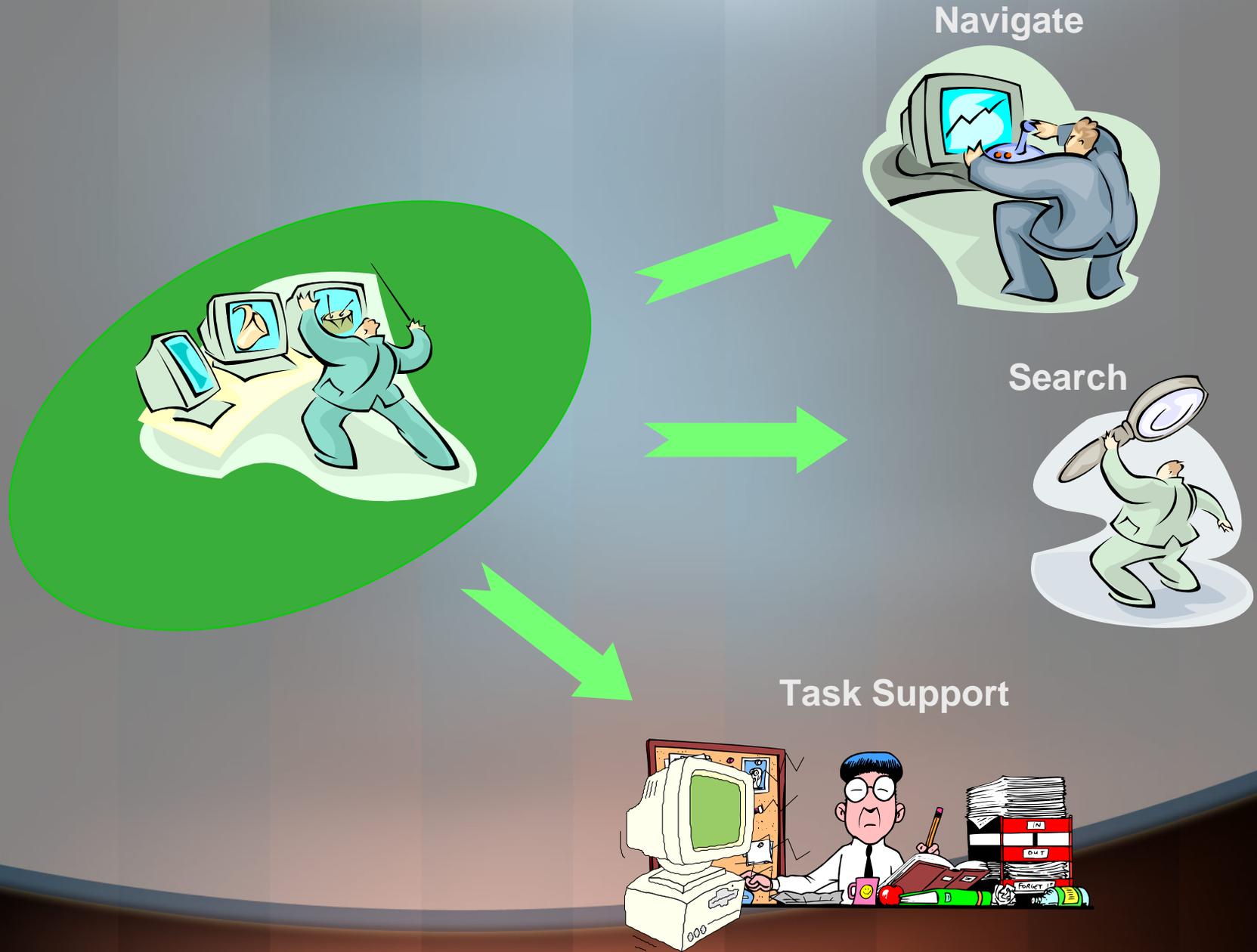


Knowledge Bridge

Operational Knowledge (domestic or international)



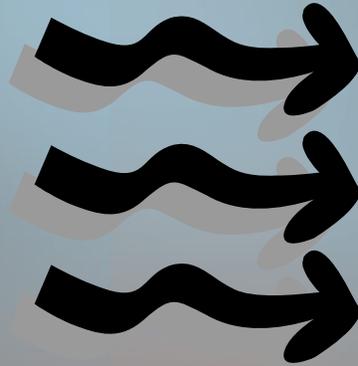
Knowledge Organization



Paradigm Shift



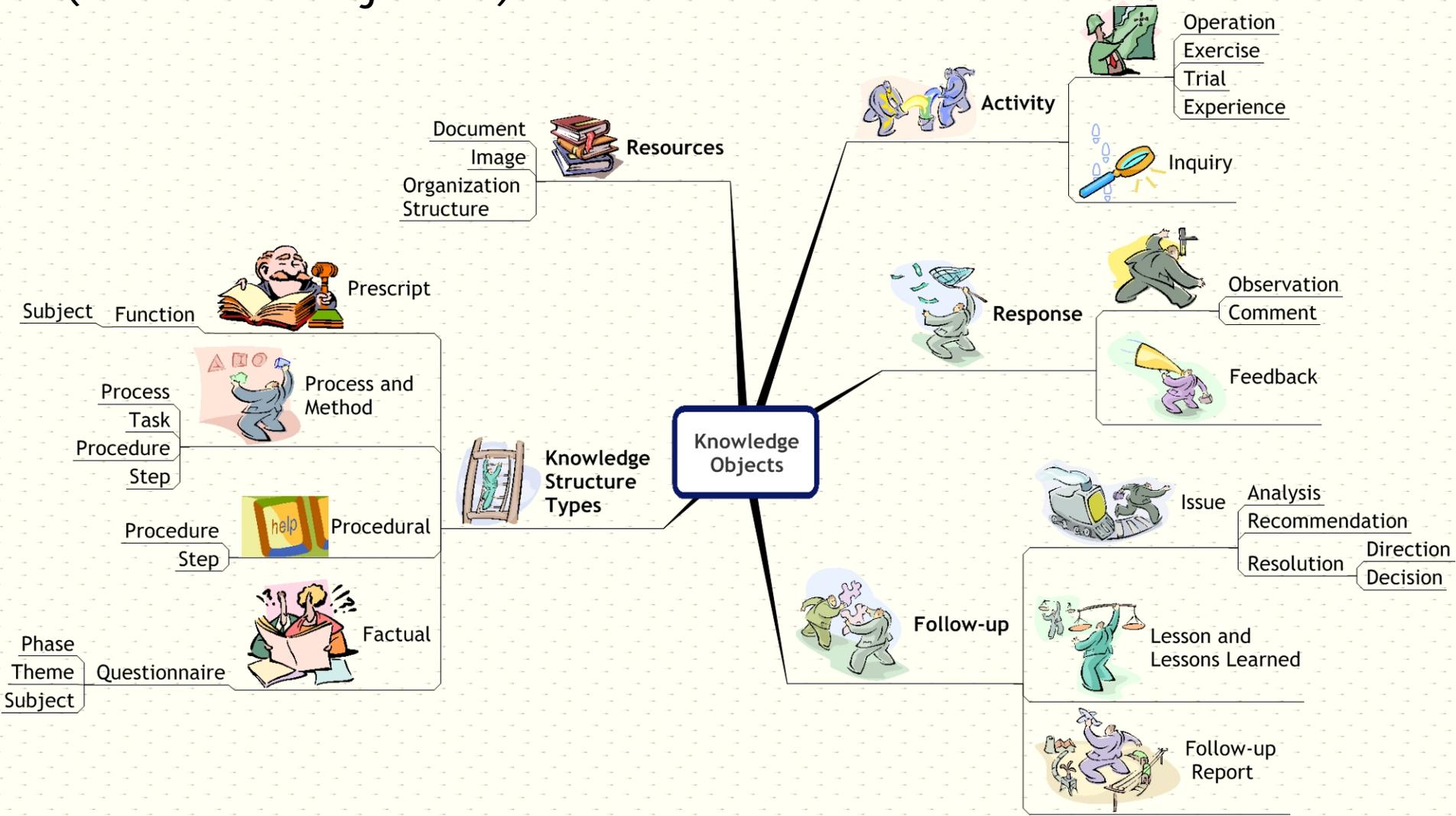
Manage
Documents



Manage
Knowledge Objects

Knowledge as Knowledge Objects

(distinct objects)



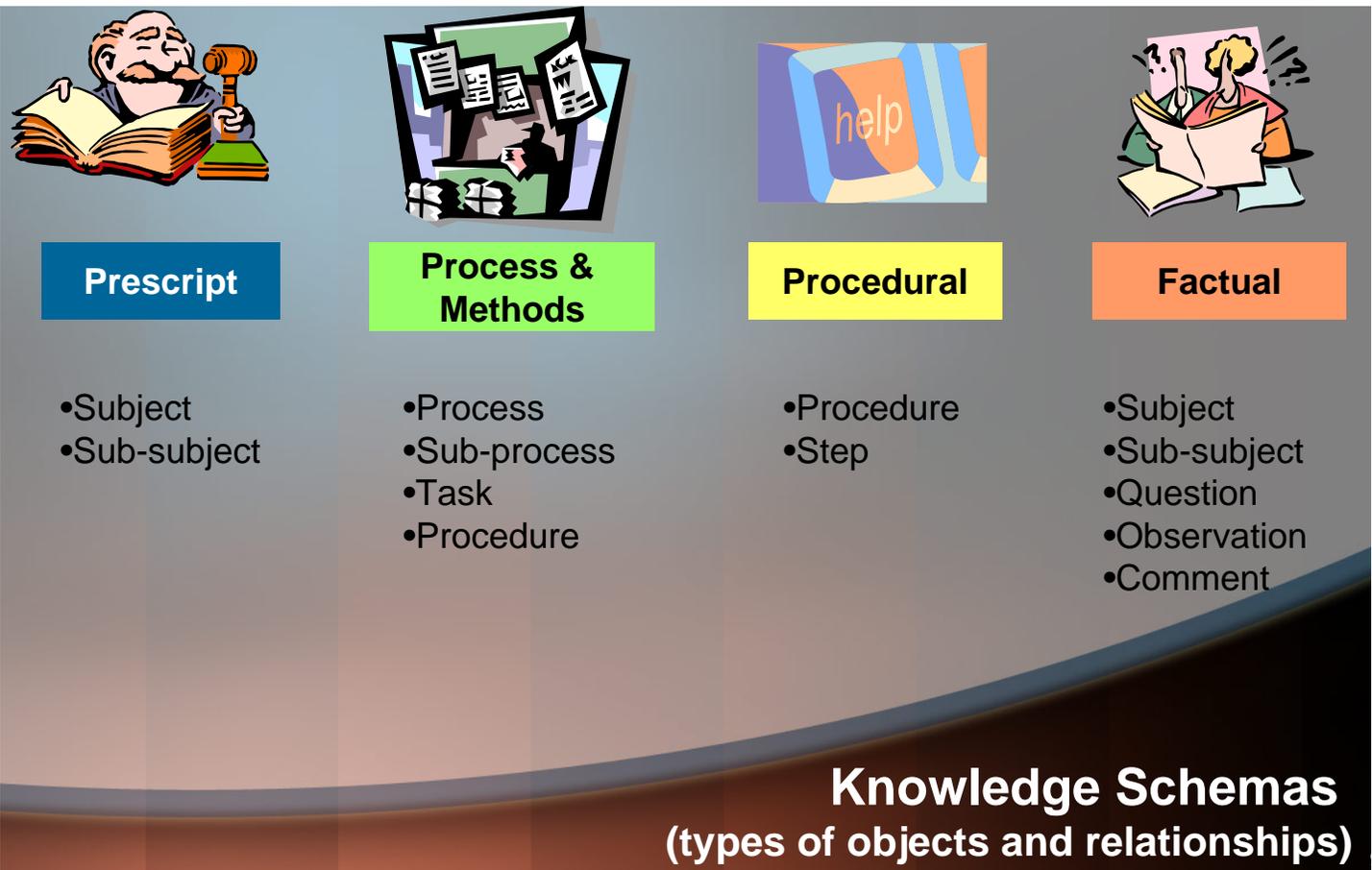
Knowledge as Knowledge Objects

(contained in a structure)

Examples



Knowledge Structure



Knowledge Schemas
(types of objects and relationships)

Relationships between Knowledge Objects



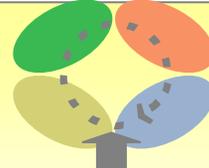
Tacit:
Exists within
peoples' memories

Explicit:
Exists within
the Knowledge Base



CF/DND Corporate Knowledge

Learning Process



Feedback from CF/DND Personnel

Doctrine

- Keystone Doctrine
- Supporting Doctrine
- TTPs
- Aide Memoire

Training

- Individual
- Collective Training
- Theater and Mission
- Continuation

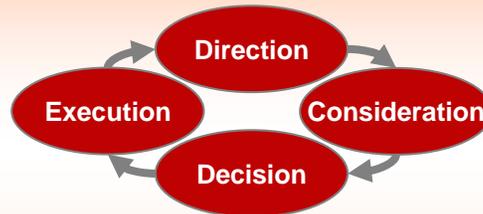
Systems e.g. LCSS

- SOPs
- Application Help

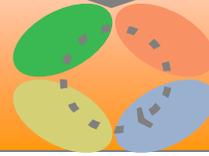
Knowledge Bridge

Operational Knowledge (domestic or international)

Battle Procedure
↕
Decision-Action Cycle



Feedback from CF/DND Personnel

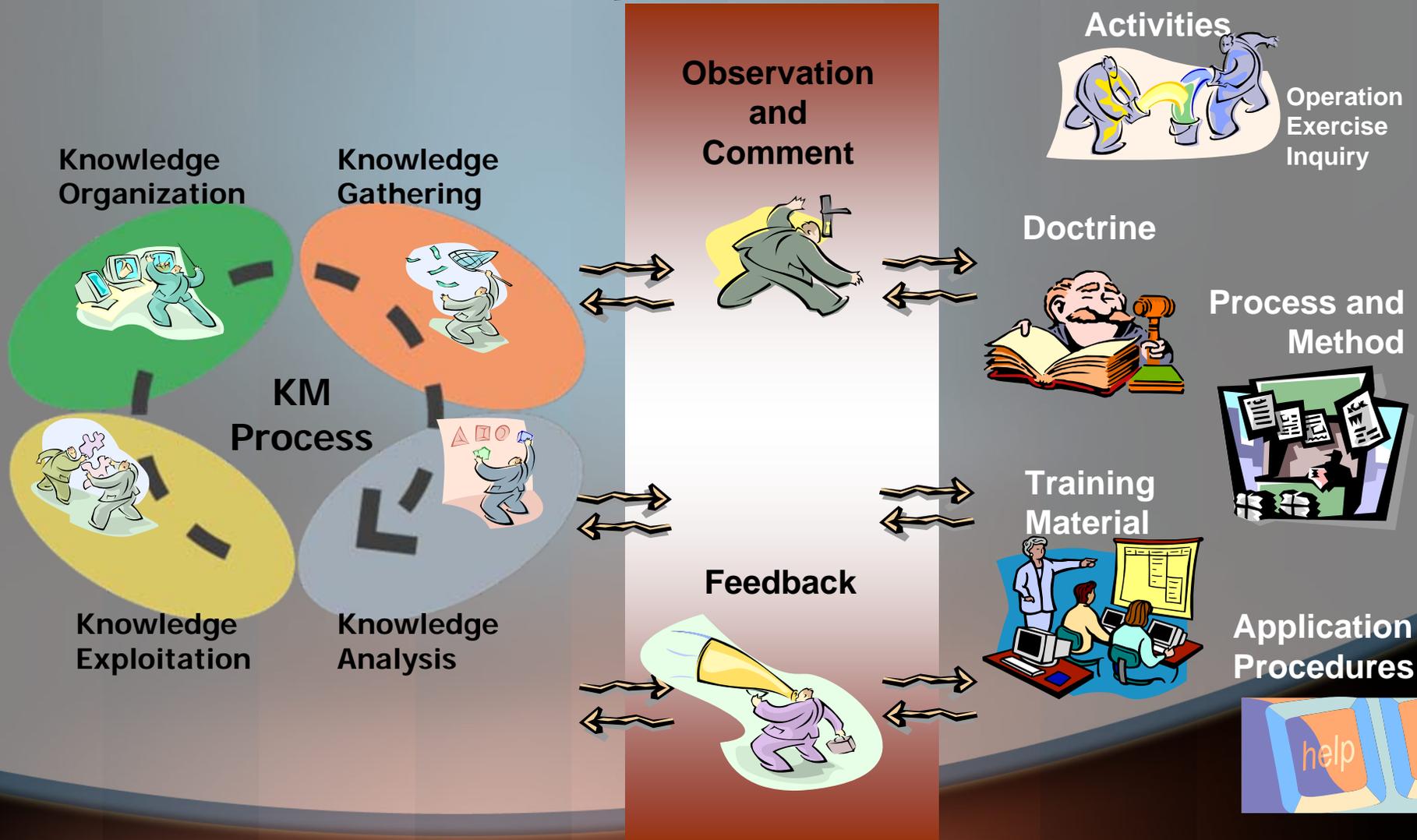


Learning Process

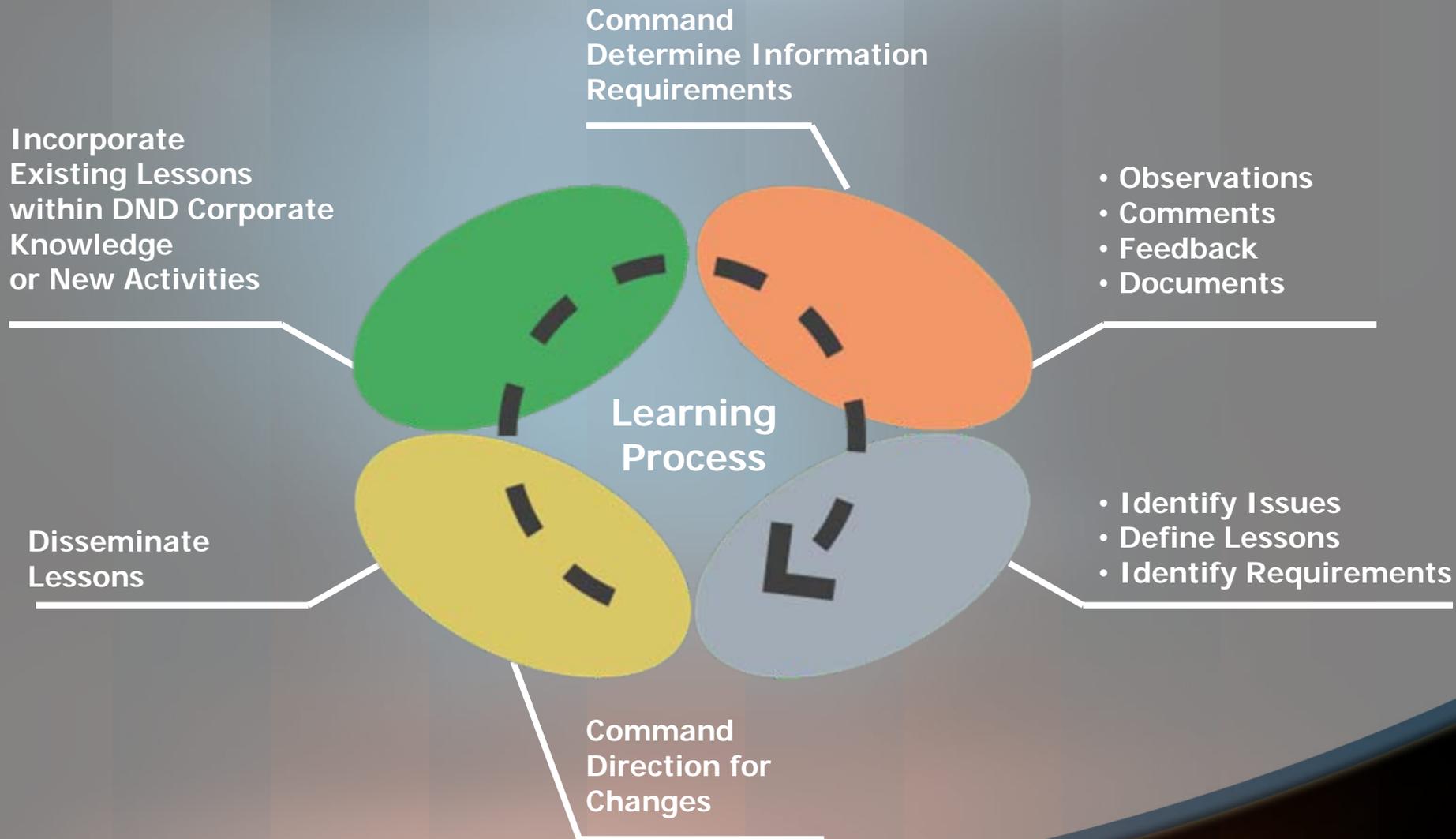
Manage Feedback

Process

Knowledge Objects

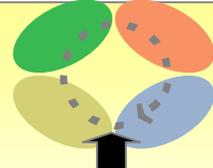


Learning Perspective



CF/DND Corporate Knowledge

Learning Process



Feedback from CF/DND Personnel

Doctrine

- Keystone Doctrine
- Supporting Doctrine
- TTPs
- Aide Memoire

Training

- Individual
- Collective Training
- Theater and Mission
- Continuation

Systems e.g. LCSS

- SOPs
- Application Help

Task Support

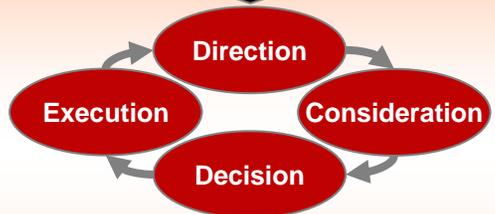
Create Knowledge Relationships

Operational Knowledge (domestic or international)

Task Support

Access Contextual Help

Battle Procedure
↕
Decision-Action Cycle

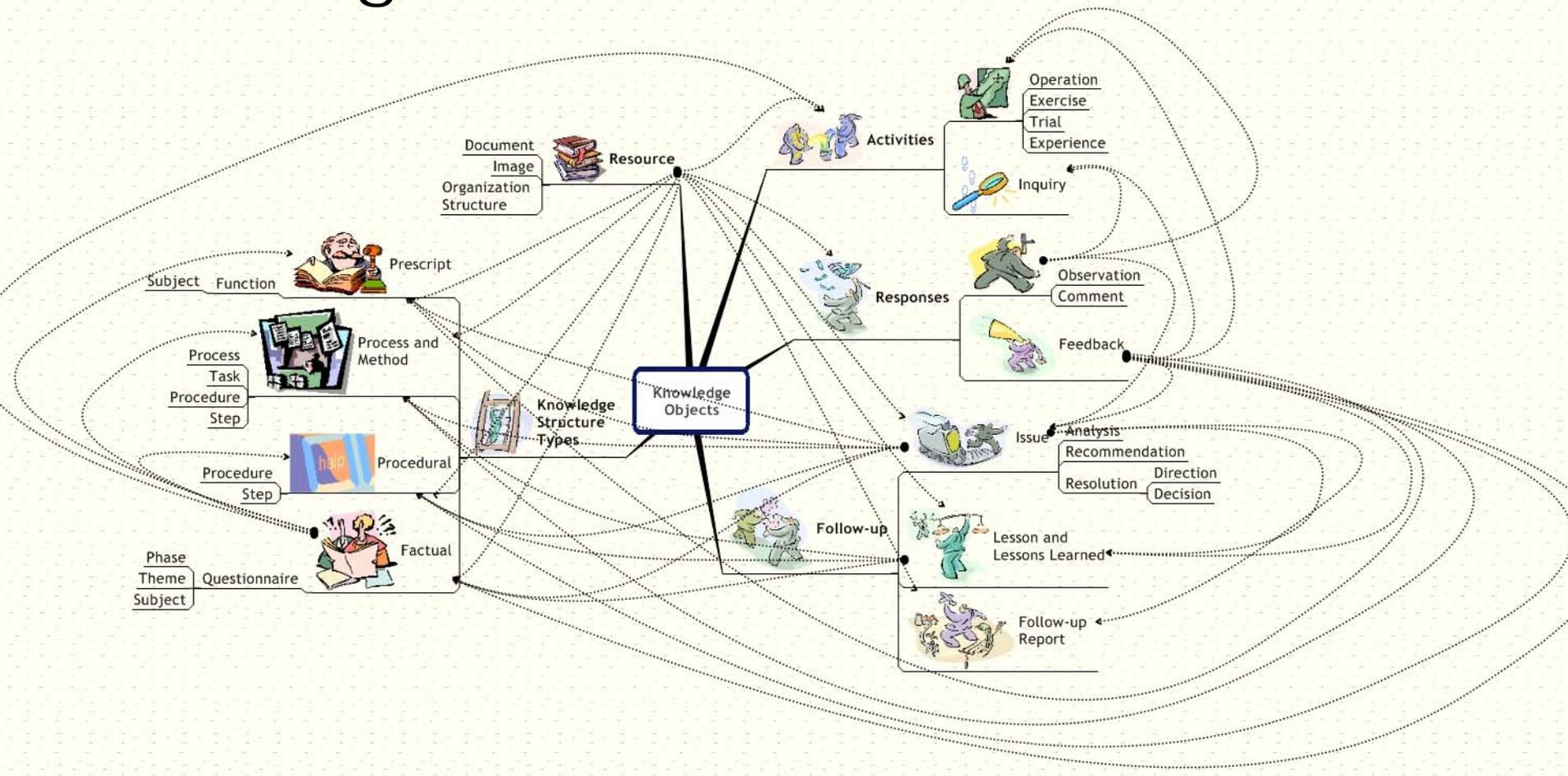


Feedback from CF/DND Personnel



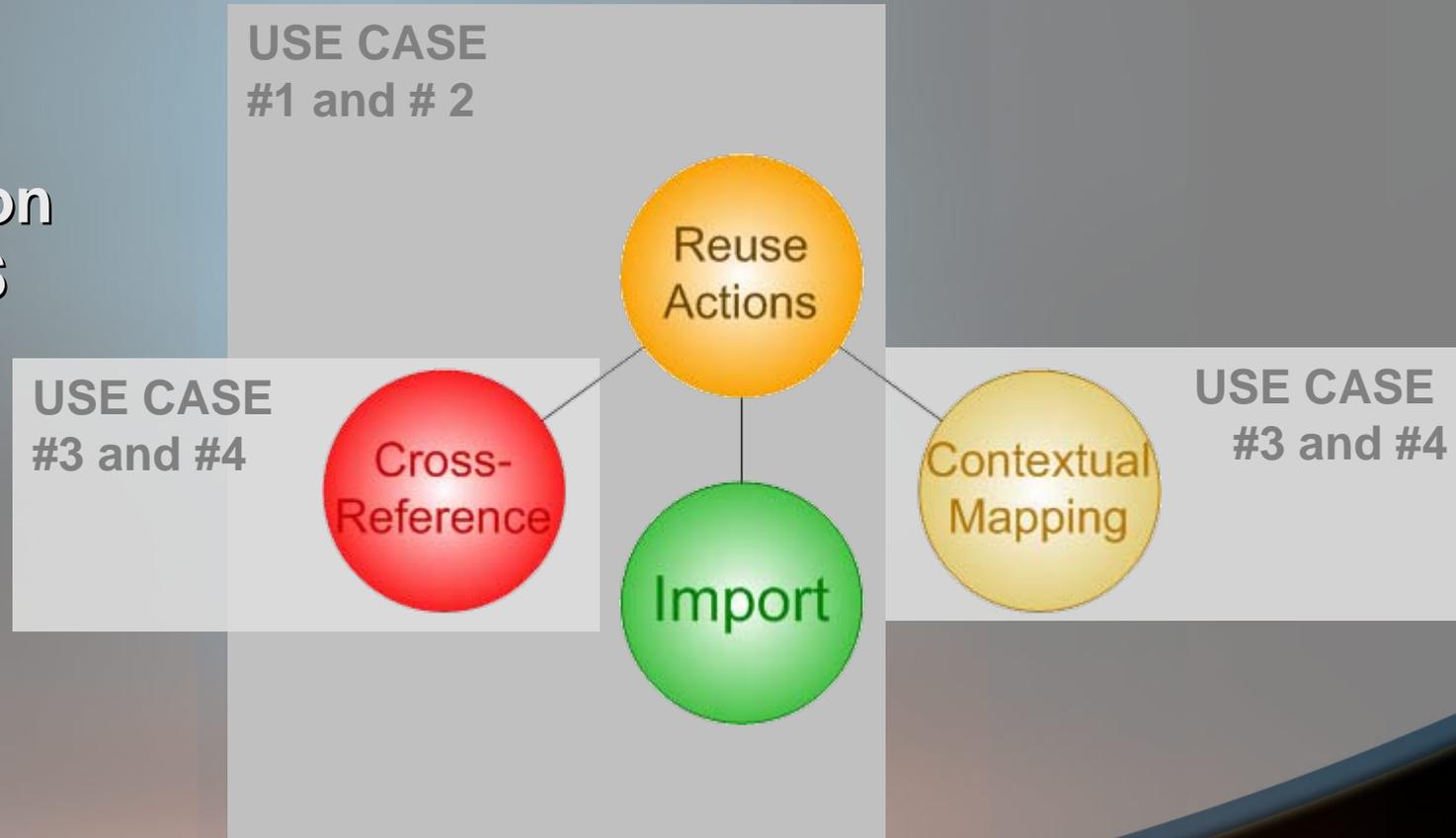
Learning Process

Manage Relationships between Knowledge Objects within the Knowledge Base

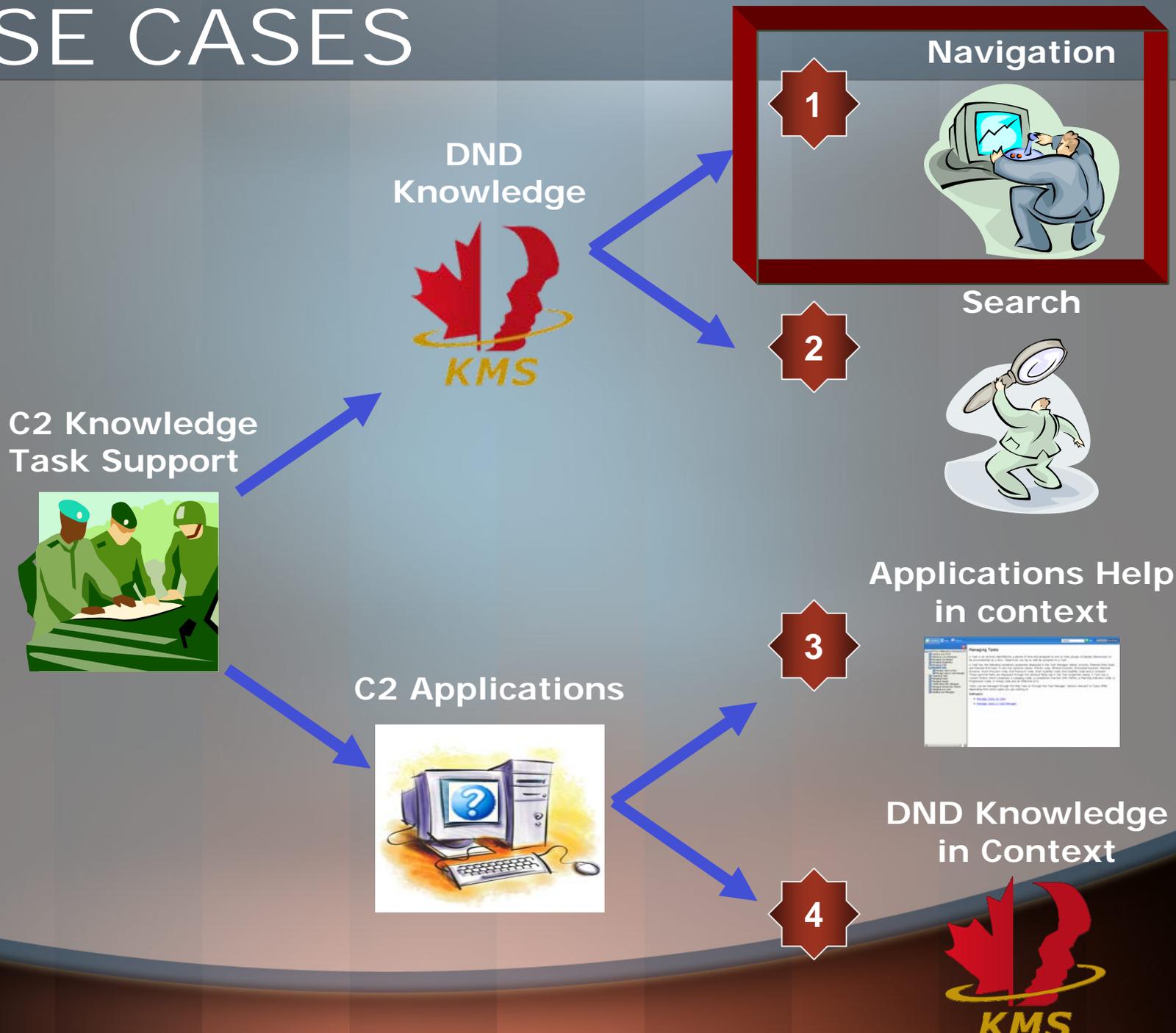


Manage Knowledge Relationships to Reuse Knowledge

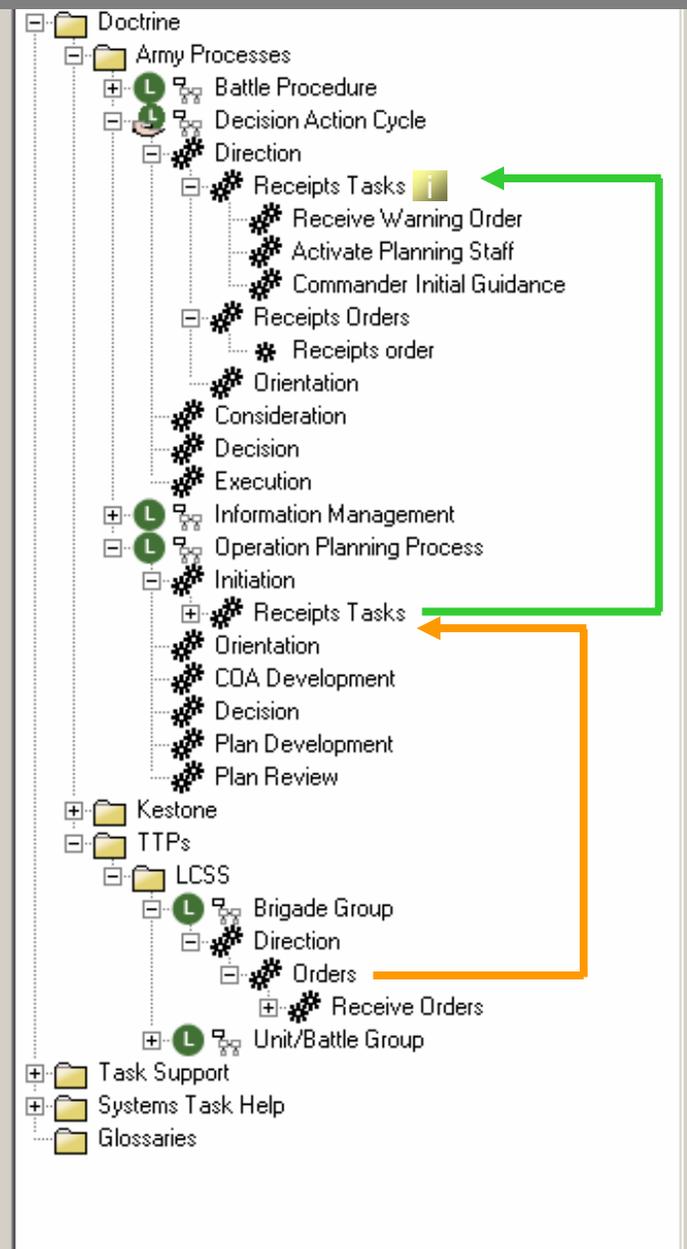
Reuse Action within KMS



USE CASES



Use Case #1: Navigate through Linked Objects



Process

Identification | Properties | Sub-Objects | Availability

Name: Receipts Tasks

Process: Direction

Description: Receipts Tasks consists of ...

Purpose: The purpose is ...

Pre-Condition: Must have this ...

Post-Condition: The post-conditions are ...

Related Elements

- Documents (0)
- Concepts (0)
- Doctrine/Task Support (1)
- Orders
- Mappings (0)

Receipts Task within the OPP
linked to
Direction Process of the Decision Action Cycle

Orders Process of the Brigade Group Process
linked or cross-referenced to
Receipts Tasks of the OPP

Use Case #1: OPP description and Training Material

The screenshot displays a software interface with a tree view on the left and a 'Structure' window on the right.

Tree View:

- Doctrine
 - Army Processes
 - Battle Procedure
 - Decision Action Cycle
 - Information Management
 - Operation Planning Process
 - Initiation
 - Orientation
 - COA Development
 - Decision
 - Plan Development
 - Plan Review
 - Kestone
 - TTPs
 - Task Support
 - Staff Officer's Handbook
 - LCSS Training
 - Doctrine Lessons
 - Decision Action Cycle
 - Battle Procedure
 - OPP
 - Collective Estimate
 - Fomal Estimate
 - Mission Analysis
 - ISTAR
 - Systems Task Help
 - Glossaries

Structure Window:

- Identification
 - Name: Operation Planning Process
 - Elements: Land
 - Category: Army Processes
 - Domain: Doctrine
 - Schema: Generic Process/Task/Procedure/Step Structure
 - Description: The description of the Operation Planning Process is manage using distinct objects within a structure. The Knowledge schema in use is a hierarchy of process, sub-process, tasks, procedures and steps
- Sub-Objects
- Availability

Related Elements:

- Documents (3)
 - Mission Analysis.ppt (PowerPoint, 72...
 - The Collective Estimate V8.ppt (Power...
 - The Formal Estimate V8.ppt (PowerPo...
- Concepts (0)
- Doctrine/Task Support (0)
- Mappings (0)

Callout: Click on the document to open it

OPP Training Material is cross-referenced to the OPP (description)

Use Case #1: OPP description and Training Material

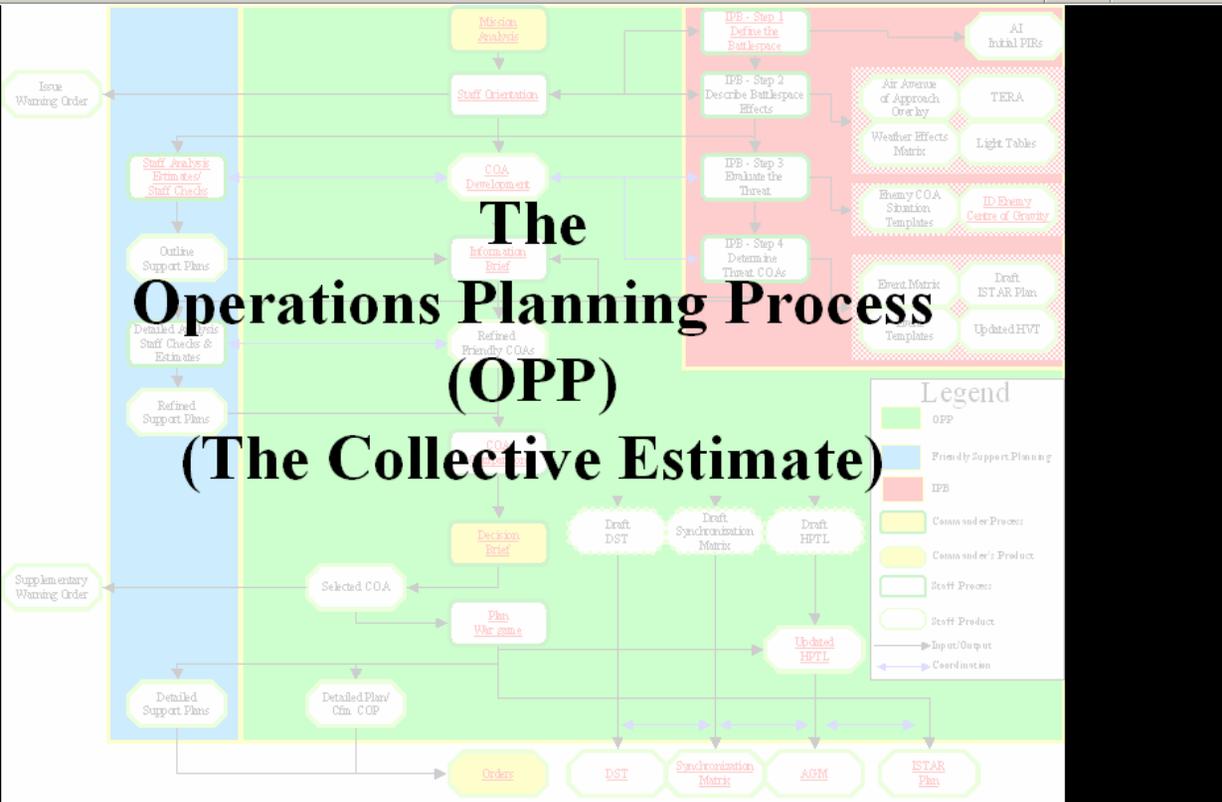
The screenshot shows a web browser window displaying a file management interface. On the left, a tree view shows the following structure:

- Doctrine
 - Army Processes
 - Battle Procedure
 - Decision Action Cycle
 - Information Management
 - Operation Planning Process

The main content area shows a 'Structure' window with the following tabs: Identification, Sub-Objects, Availability. The 'Name' field contains 'Operation Planning Process'. Below the browser window, a list of documents is visible:

- Documents (3)
 - Mission Analysis.ppt (PowerPoint, 72...
 - The Collective Estimate V8.ppt (Power...
 - The Formal Estimate V8.ppt (PowerPo...
- Concerns (0)
- Doctrine/Task Support (0)
- Applications (0)

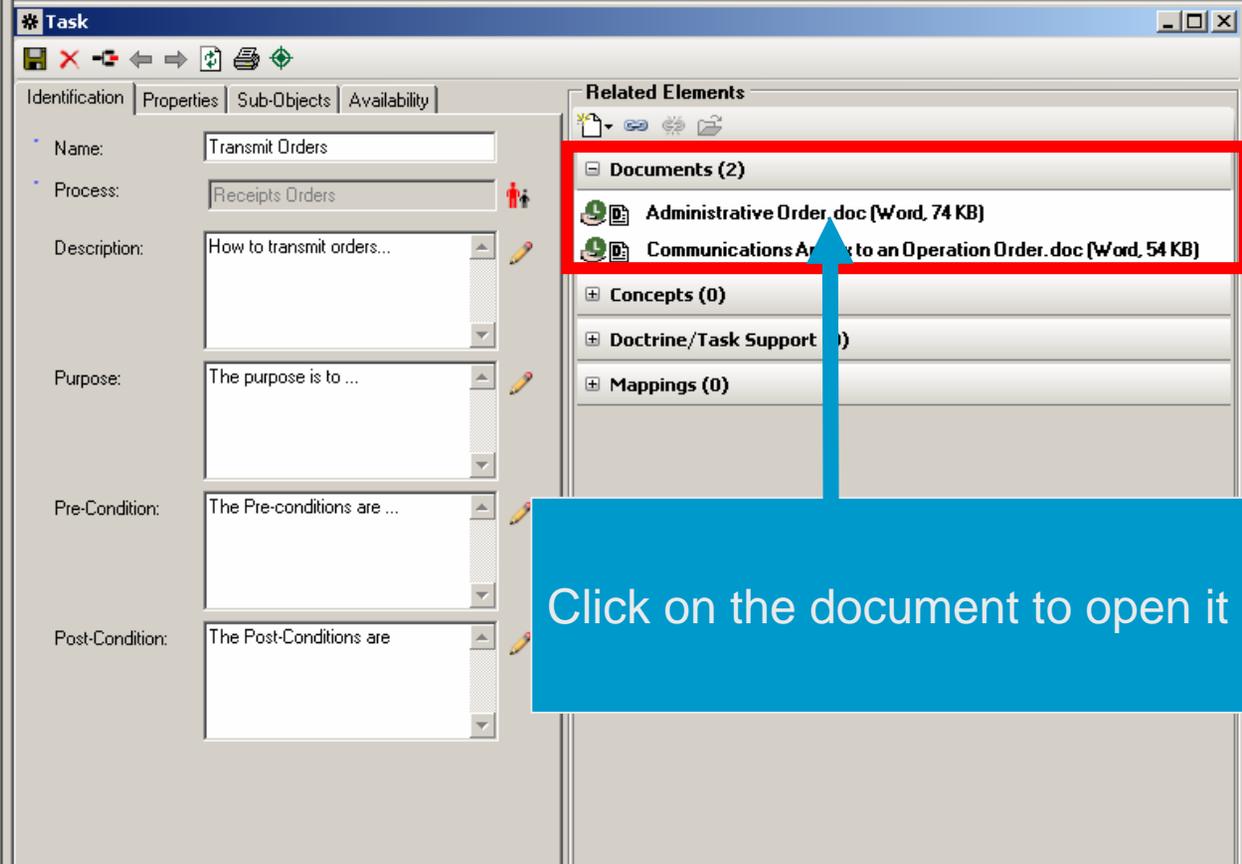
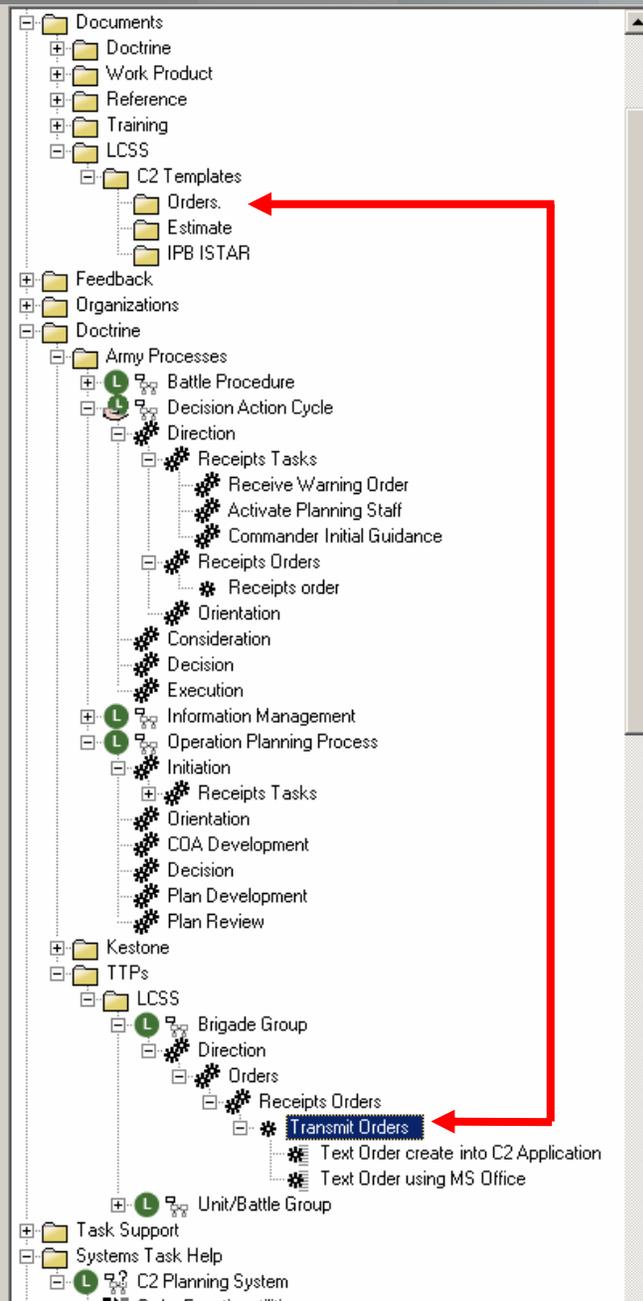
The Operations Planning Process (OPP) (The Collective Estimate)



the document to open it

P Training Material
cross-referenced
the OPP (description)

Use Case #1: TTPs and Order Templates



Click on the document to open it

Orders templates are cross-referenced to the Transmit Orders of the Brigade Group TTP

Use Case #1: TTPs and Order Templates

The screenshot displays a web browser window with the address `http://localhost/kmsmay26/FileView.aspx?Id=534&UniqueParameter=632851135198798976`. The browser shows a document template with the following content:

SECURITY CLASSIFICATION

Copy-Number.....of.....

Name of HQ
Location of HQ
[] → [] → Jun 06
ADM

ADMINISTRATIVE ORDER NUMBER (MINIMUM TWO DIGITS)

References: A
B
C

[Time Zone: **TIME-ZONE**

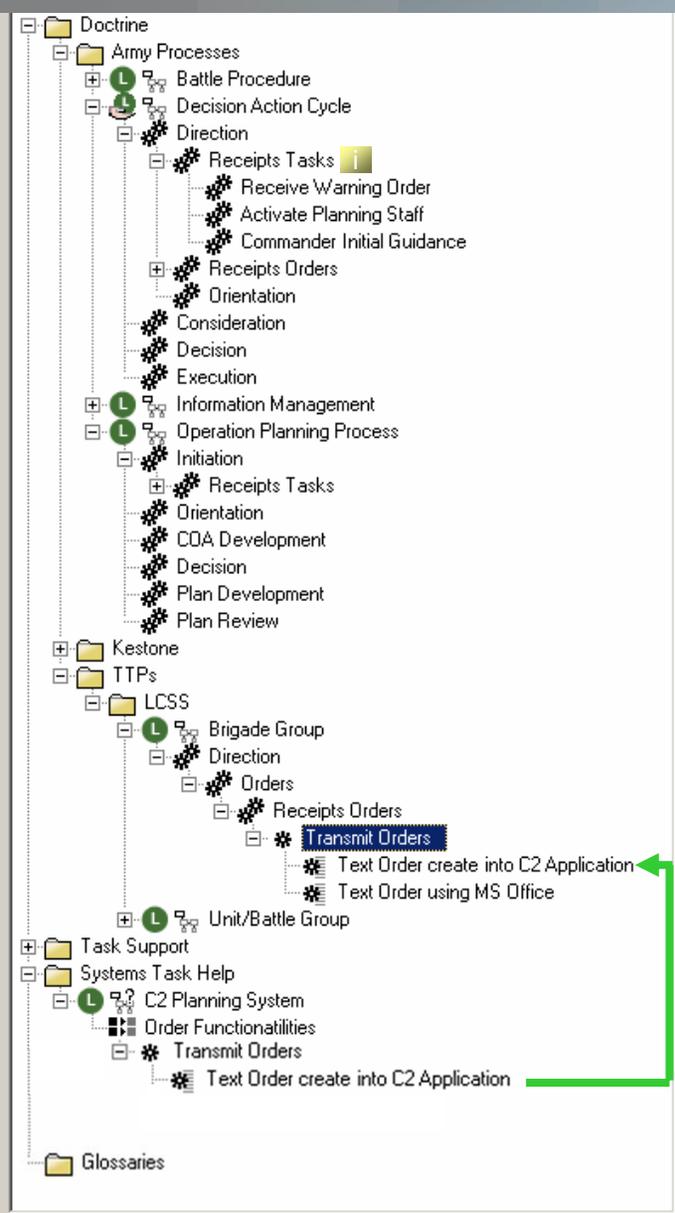
- **SITUATION**
 - **Enemy Forces**
 - **Friendly Forces**
 - **Attachments and Detachments**

Comments on the right side of the document:

- Commentaire [COM]** he date-time group is filled in by hand when the order is signed. Dates are written in the day-month-year, e.g., 9th March 1996. Abbreviations are used in memoranda, notes and orders. When abbreviations are used, the first three letters of the name are capitalized, and the last two digits of the year are used; the first letter of the last two digits is capitalized, e.g., Mar96. **not used** to precede the day in dates except in the date of the order.
- Commentaire [COM]** This is the time zone used in the order.
- Commentaire [COM]** Paragraph Headings. Paragraphs 1. SITUATION and 2. MISSION are mandatory.
- Commentaire [COM]** Usually reference is made to related operation order information since the late 1990s.
- Commentaire [COM]** List only the higher force group.

At the bottom right, the text "Zone inconnue" is visible.

Use Case #1: TTPs and Application Help Procedures



Name	Description
Text Order create into C2 Application	
Text Order using MS Office	

Click on the C2 Application Procedure in order to access the Help Topic

Use Case #1: Access to Application Help Procedure

The screenshot shows the GDC_SAMS application interface. On the left is a tree view of the application's structure, including folders like 'Doctrine', 'Army Processes', 'Task Support', and 'Systems Task Help'. The main window displays a help topic titled 'Open Order Dialog Box'. The help text explains that an open order has one field displaying the text of the order. Below the text is a diagram of the 'Order 1' dialog box, which contains a text area and four buttons: 'Show Overlay', 'Accept', 'OK', and 'Help'. Red call-out numbers 1 through 4 are placed over these buttons. The 'Show Overlay' button is circled with a red 1, 'Accept' with a red 2, 'OK' with a red 3, and 'Help' with a red 4.

Open Order Dialog Box

Open Order (Accessed by clicking the View button on the **Orders** tab)
 An open Order has one field that displays the text of the Order

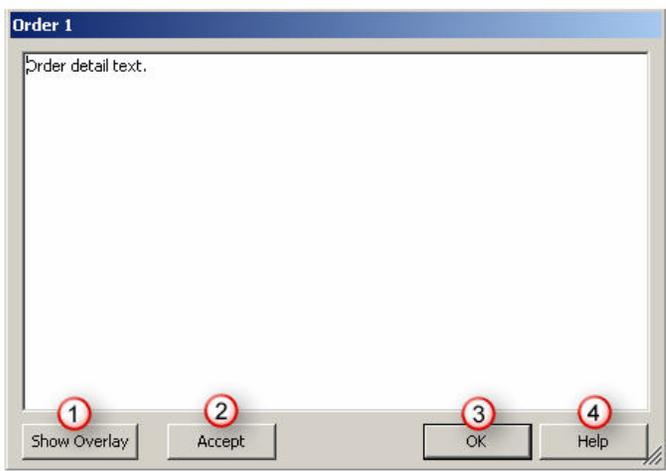
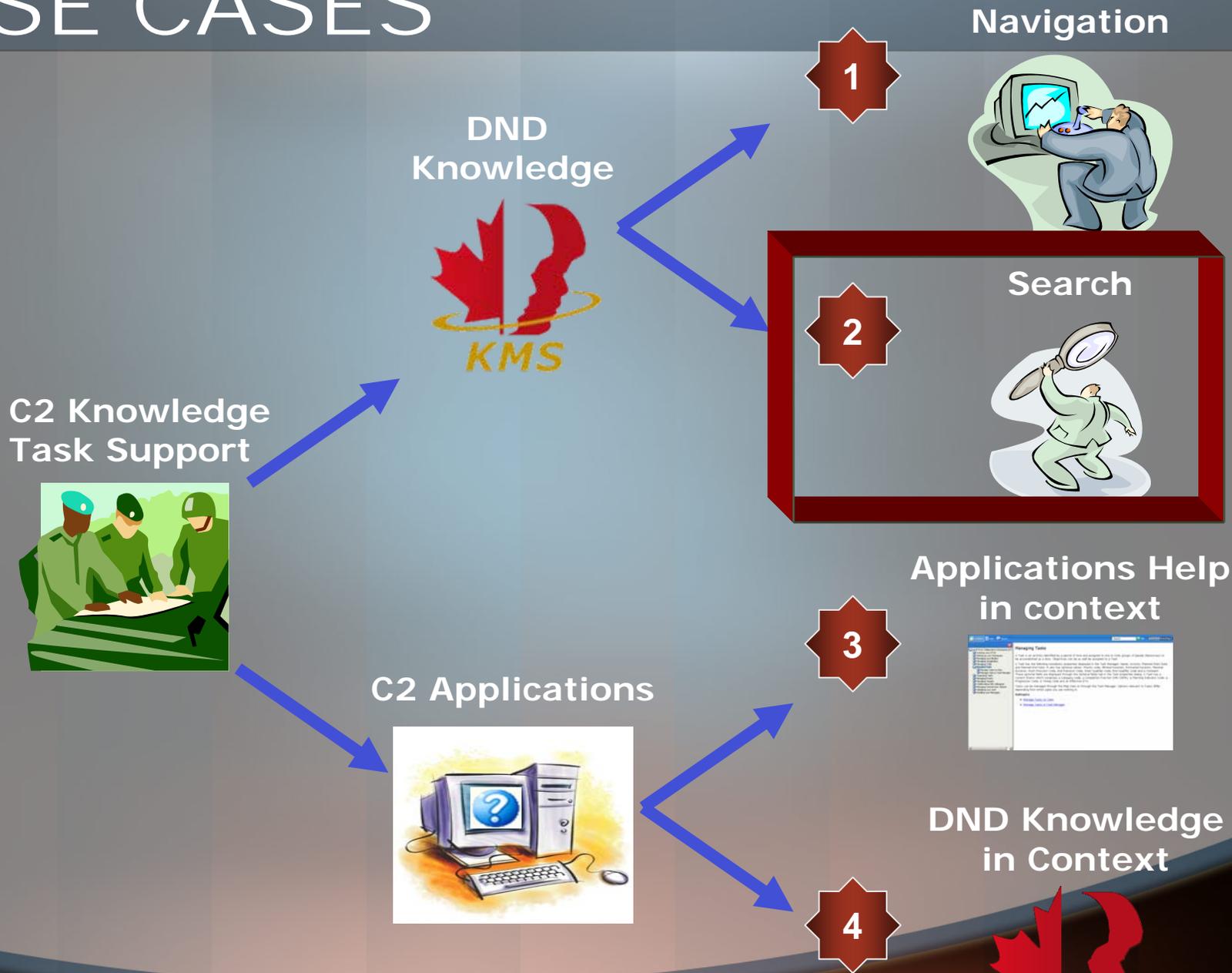


Figure 9 Order dialog box fields and buttons

Call-out Number	GUI Item	Function
1	Show Overlay	Displays the overlay attached to the order.
2	Accept	

USE CASES



Navigation

1



DND Knowledge



2

Search



C2 Knowledge Task Support



C2 Applications



Applications Help in context

3



DND Knowledge in Context

4



USE CASE #2: Search

Advanced Search

Decision Action Cycle

Find Results with: Element:

Language: Domain:

Sort Order: Period: From: To:

What to Search
Only the following items will be returned by the search.

<input checked="" type="checkbox"/> Activities	<input checked="" type="checkbox"/> Issues	<input type="button" value="Select All"/>
<input checked="" type="checkbox"/> Report Structures	<input checked="" type="checkbox"/> Lessons	<input type="button" value="Unselect All"/>
<input checked="" type="checkbox"/> Observations and Comments	<input checked="" type="checkbox"/> Documents	
<input checked="" type="checkbox"/> Feedback	<input checked="" type="checkbox"/> Glossary Concepts	
<input checked="" type="checkbox"/> Doctrine and Task Support		

Where to Search
Limit the Search of items within the following branches of knowledge.

Search Criteria

Search Results

- Activities
- Report Structures
- Doctrine
 - Army Processes
 - Keystone
 - TTPs
- Task Support
 - Staff Officer's Hand
 - LCSS Training

Search Results

14 results found

Name	Date	Description	Path
CDA DEVELOPMENT .ppt	2006-09-01		Documents > Training > Staff Officer's Handbook > CLFCSC SOH V1.2 MAY 06 >
The Formal Estimate V8.ppt	2006-09-01		Documents > Training > Staff Officer's Handbook > CLFCSC SOH V1.2 MAY 06 >
The Collective Estimate V8.ppt	2006-09-01		Documents > Training > Staff Officer's Handbook > CLFCSC SOH V1.2 MAY 06 >
Decision Action Cycle V8.ppt	2006-09-01		Documents > Training > Staff Officer's Handbook > CLFCSC SOH V1.2 MAY 06 >
Decision Action Cycle	2006-08-28	This is an example of an Army Process divided by objects	Doctrine > Army Processes > Decision Action Cycle
TABLE OF CONTENT .doc	2006-07-07		Documents > Training > Staff Officer's Handbook > CLFCSC SOH V1.2 MAY 06 >
ASDS.05.01.01.SE .doc	2006-07-07		Documents > Training > Staff Officer's Handbook > CLFCSC SOH V1.2 MAY 06 >
Op ATHENA RO1 Lessons Learned - HQ KMNB - Info Ops	2006-01-26		Documents > Reference > Op ATHENA RO1 Lessons Learned - HQ KMNB - Info
Op GRIZZLY ROO POR (MS Word Format)	2005-04-14	Hard copy of POR in MS Word format.	Documents > Reference > Op GRIZZLY ROO POR (MS Word Format)
2004 - 0011 - Op ATHENA RO1 - Lessons Learned - KMNB ...	2005-01-07	This document is a compilation of information received in MS Pow...	Lessons > Tactical > 2004 - 0011 - Op ATHENA RO1 - Lessons Learned - KMNB
Op ATHENA Roto 1 ISTAR lessons learned(1)	2004-12-07	ISTAR CC lessons from Afghanistan	Documents > Reference > Op ATHENA Roto 1 ISTAR lessons learned(1)
Op ATHENA RO 1 ISTAR Lessons Learned	2004-11-05	Op ATHENA RO 1 ISTAR Lessons Learned KMNB HQCamp ...	Documents > Reference > Op ATHENA RO 1 ISTAR Lessons Learned
Op ATHENA RO 1 ISTAR Manual	2004-07-15	Op ATHENA RO 1 ISTAR Manual G3 ISTAR'S COMMENTS - I...	Documents > Reference > Op ATHENA RO 1 ISTAR Manual
1 - Unit / Land Component Units	2003-12-09	2 PPCLI a. At the unit level, coordination was very good and extre...	Activities > Operations > Domestic Operations > (Dom.) Security Operation or Aid t

USE CASE #2: Search Results

Advanced Search

Decision Action Cycle

Find Results with:

Language:

Sort Order:

What to Search

Only the following items will be returned by the search.

- Activities
- Report Structures
- Observations and Comments
- Feedback
- Doctrine and Task Support
- Issues
- Lessons
- Documents
- Glossary Co

Where to Search

Limit the Search of items within the following branches of know

- Activities
- Report Structures
- Doctrine

UNCLASSIFIED

LAND

HOME
What's New
Activities
Issues/Lessons
Reports/Templates
Doctrine/Task Support
Resources

Operations | Exercises | Experiments and Trials | Others
About | FAQ | Your Voice | Contact Us | Help

You are here : ... > [Activities](#) > [Operations](#) > [Domestic Operations](#) > (Dom.) Security Operation or Aid to Civil Power/Law Enforcement Agencies > [GRIZZLY](#) > [R00\(1\)](#) > [Deployment](#) > [Battle Procedure](#) > [Coordination](#) > [Question Series 20](#)

Question Series 20 (Question)

Elements: Land

Activity: GRIZZLY > R00(1)

Description: a. What is your observation of the coordination of activities between NDHQ (if units tasked during planning and subsequent phases of the operation? b. What went particularly well during this operation? What could be improved?

Observations:

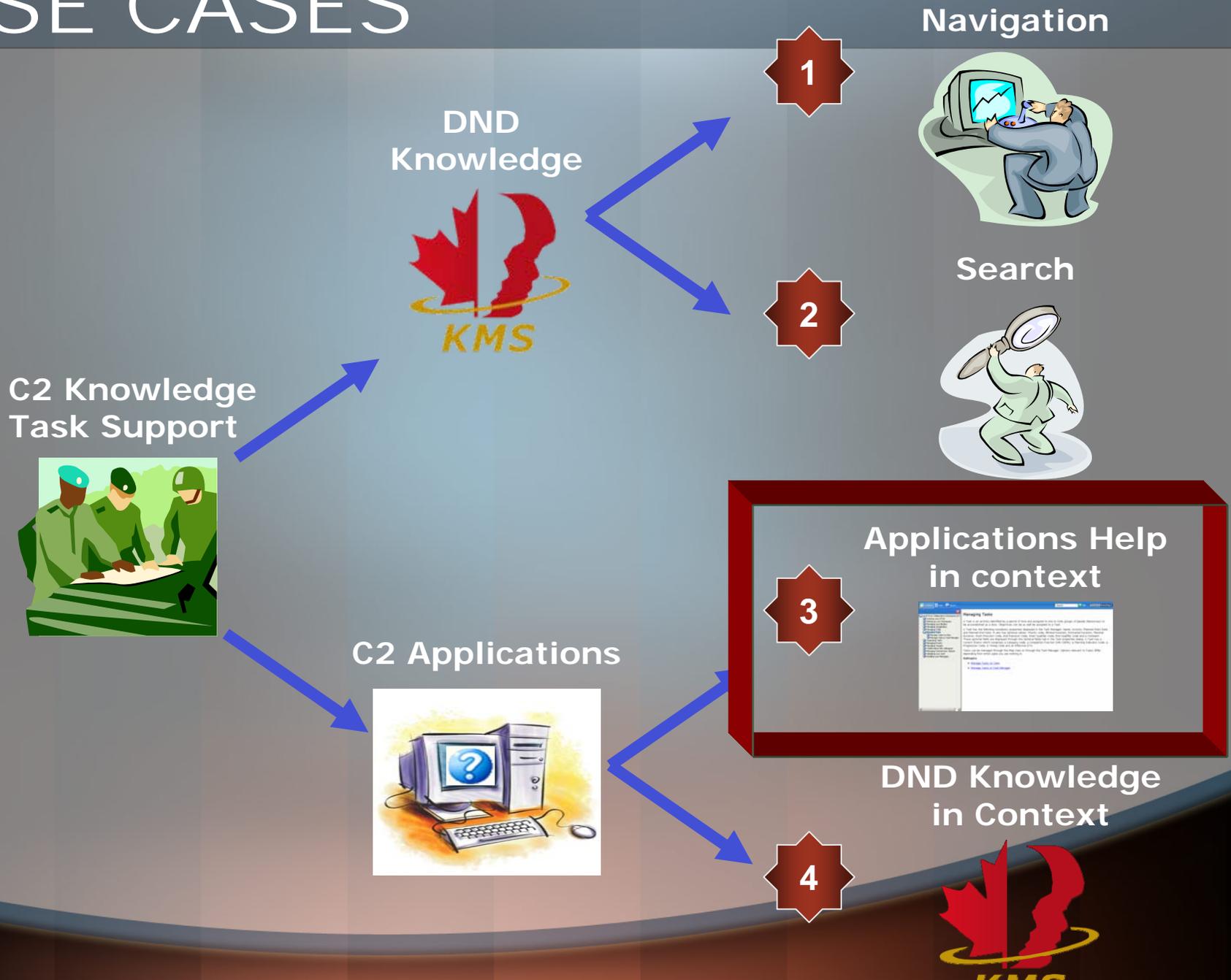
- 2003 > GRIZZLY > R00(1)
 - 1 - Unit / Land Component Units
 - PPCLI
 - a. At the unit level, coordination was very good and extremely effective. It was very important for the RCMP to help confirm info and coord directly with the RCMP. The 100-1 was very helpful. Therefore, coordination during Phase four was important and worked very well. b. The coordination was very good.
 - 1 - Unit / Support Component Units
 - Springbank. Property issues not coord properly and four weeks is not enough time to staff through PWGSC. On site CE contract supervisor is required. b. Cord RECCE that included CSM/Eng Svcs/Property O/and Enviro O went well and should be the SOP. More lead-time would have helped. Decona. Time lag to obtain info and responses to queries/ req for materiel sp was slow
 - 10 - Environmental Component / Air Component Commander
 - No comment.
 - 10 - Environmental Component / Joint Task Force HQ
 - a. Coordination with NDHQ J staff was mostly good; however, too much of the overall coordination responsibilities were devolved to a small, overworked LFWA staff. Ordinarily, force generation is an environmental responsibility and force employment belongs to the JTF; it was seldom clear who had control over some issues. It did not help that LFWA staff involved in the planning phase had other issues with which to deal; in retrospect, I would have devoted a larger staff to
 - 10 - Environmental Component / Land Component Commander
 - a. Coordination between the JTF and LC planners was very good. The coordination with NDHQ was not so effective. All international operations presently being conducted by 1 CMRG involve a staff assistance visit (SAV) whereby NDHQ staff

Access the object through the Web

Select the object from the search results list: Observation of a Unit

	Date	Description	Path
	2006-09-01		Documents > Training > Staff Officer's Handbook > CLFCSC SOH V1.2 MAY 06 > ...
	2006-09-01		Documents > Training > Staff Officer's Handbook > CLFCSC SOH V1.2 MAY 06 > ...
	2006-09-01		Documents > Training > Staff Officer's Handbook > CLFCSC SOH V1.2 MAY 06 > ...
	2006-09-01		Documents > Training > Staff Officer's Handbook > CLFCSC SOH V1.2 MAY 06 > ...
	2006-08-28	This is an example of an Army Process divided by objects	Doctrine > Army Processes > Decision Action Cycle
<input checked="" type="radio"/>	2006-07-07	TABLE OF CONTENT .doc	Documents > Training > Staff Officer's Handbook > CLFCSC SOH V1.2 MAY 06 > ...
<input checked="" type="radio"/>	2006-07-07	ASDS.05.01.01.SE.doc	Documents > Training > Staff Officer's Handbook > CLFCSC SOH V1.2 MAY 06 > ...
<input checked="" type="radio"/>	2006-01-26	Op ATHENA R01 Lessons Learned - HQ KMNB - Info Ops	Documents > Reference > Op ATHENA R01 Lessons Learned - HQ KMNB - Info ...
<input checked="" type="radio"/>	2005-04-14	Hard copy of POR in MS Word format.	Documents > Reference > Op GRIZZLY R00 POR (MS Word Format)
<input checked="" type="radio"/>	2005-01-07	This document is a compilation of information received in MS Pow...	Lessons > Tactical > 2004 - 0011 - Op ATHENA R01 - Lessons Learned - KMNB ...
<input checked="" type="radio"/>	2004-12-07	ISTAR CC lessons from Afghanistan	Documents > Reference > Op ATHENA Roto 1 ISTAR lessons learned(1)
<input checked="" type="radio"/>	2004-11-05	Op ATHENA R01 ISTAR Lessons Learned KMNB HQCamp ...	Documents > Reference > Op ATHENA R01 ISTAR Lessons Learned
<input checked="" type="radio"/>	2004-07-15	Op ATHENA R01 ISTAR Manual G3 ISTAR'S COMMENTS - 1...	Documents > Reference > Op ATHENA R01 ISTAR Manual
<input checked="" type="radio"/>	2003-12-09	2 PPCLI a. At the unit level, coordination was very good and extre...	Activities > Operations > Domestic Operations > (Dom.) Security Operation or Aid to ...

USE CASES



USE CASE #3: C2 Application

Help in context

C2 Knowledge
Task Support

C2 Applications

Applications Help
in context

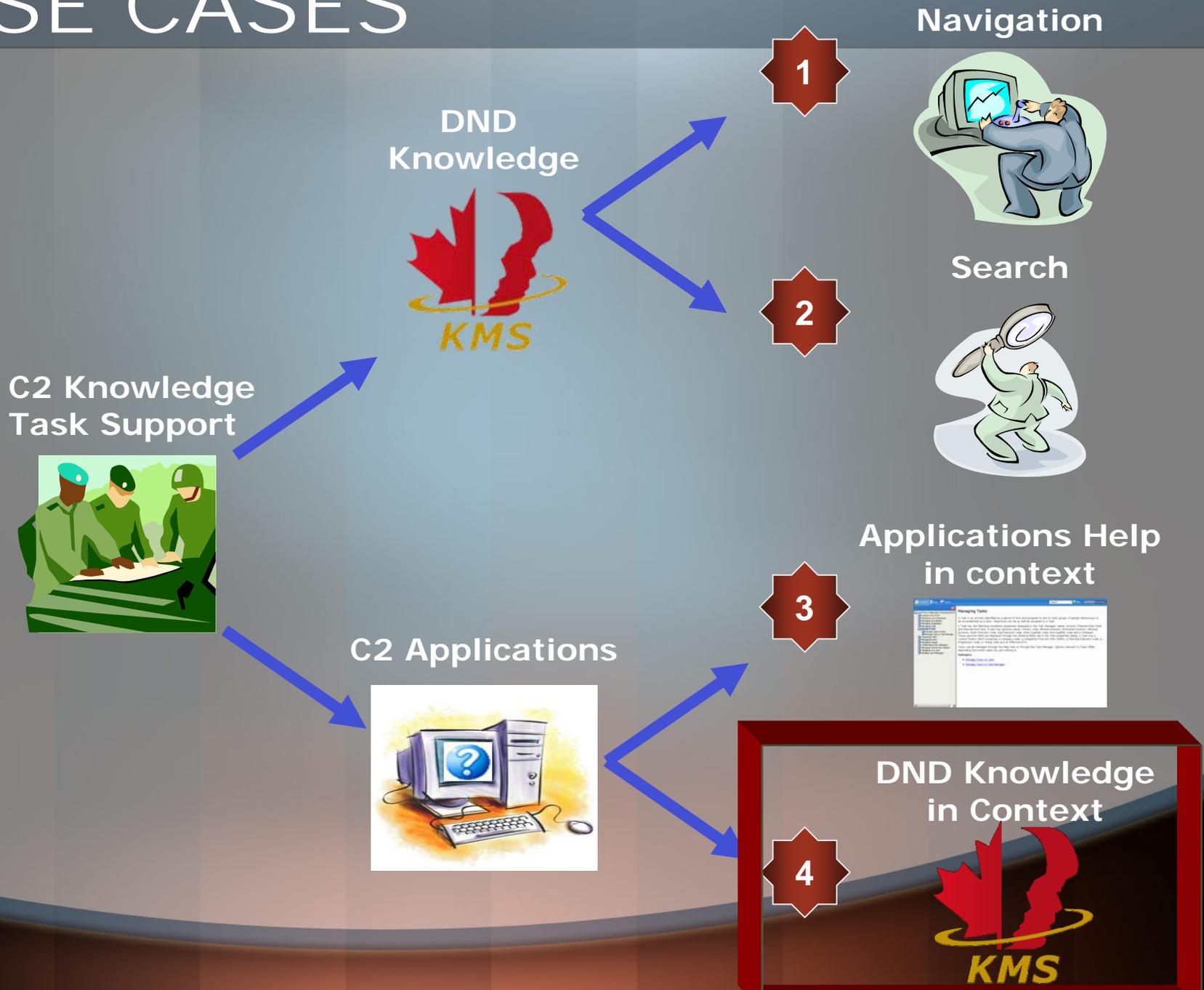


1. Transmit orders
within an Application
Window or Form

2. Click F1

3. The Topic
“How to transmit
an order using this
Application”
is presented

USE CASES



USE CASE #4: Access DND Knowledge in Context

C2 Knowledge
Task Support



C2 Applications



DND Knowledge
in Context



1. Transmit orders
within an Application
Window or Form

2. Click Shift F1

3. Select DND
Knowledge

USE CASE #4

C2 Knowledge Task Support



C2 Applications



1. Transmit orders within an Application Window or Form

2. Click Shift F1



3. Select DND Knowledge

6. KMS Open to "Receipt of Orders"

5. Click On "Receipt of Orders"

4. KMS Contextual Page Open

The screenshot shows the KMS application interface. The top navigation bar includes 'HOME', 'What's New', 'Activities', 'Issues/Lessons', 'Reports/Templates', 'Doctrine/Task Support', and 'Resources'. The main content area displays the 'Receipts order (Task)' page, which includes a description, purpose, pre-conditions, post-conditions, triggering events, business responsibilities, work products, and procedures. The right sidebar shows 'Contributor Space' and 'Related Elements'.

The screenshot shows the KMS Contextual Help page in a web browser. The page title is 'UNCLASSIFIED Knowledge Management System'. The main content area is titled 'Documents' and lists several documents with their names and paths. The 'Documents' section is highlighted in yellow.

Name	Path
Operation Order	Documents/Command and Control/Templates/Order
Training	
Initiation Lessons	Doctrine Lessons/Operations Planning Process (OPP)
Doctrine	
Processes	
Receipt of Orders	Decision Action Cycle/Direction/
Receipt of Orders	Operations Planning Process/ Initiation/
TTPs	
Receipt of Orders	Brigade-Group/Direction/Orders

Conclusion

The Knowledge Bridge between the operational and training worlds enables:

- Learning from Experiences
- Rapid Feedback
- Task support Enhanced by Knowledge Reuse
- Knowledge Access

