



# Analysis and Planning Using THE HTA TOOL

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# Presentation Plan

## Intro

- Introduction
- Hierarchical Task Analysis
- THE HTA TOOL

## Tool

- Planning for Uncertainty
- Task Allocation Techniques
- Further Tricks of the Tool

## Future

- Case Studies
- Development Routes
- Questions?



# Introduction



*(U.S. Navy photo by Petty Officer 1st Class Keith DeVinney, COMCAM, MND-B)*

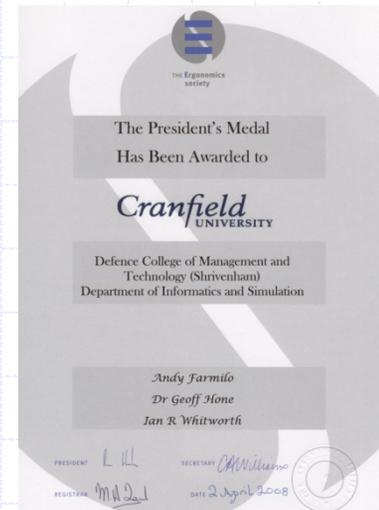


# Introduction



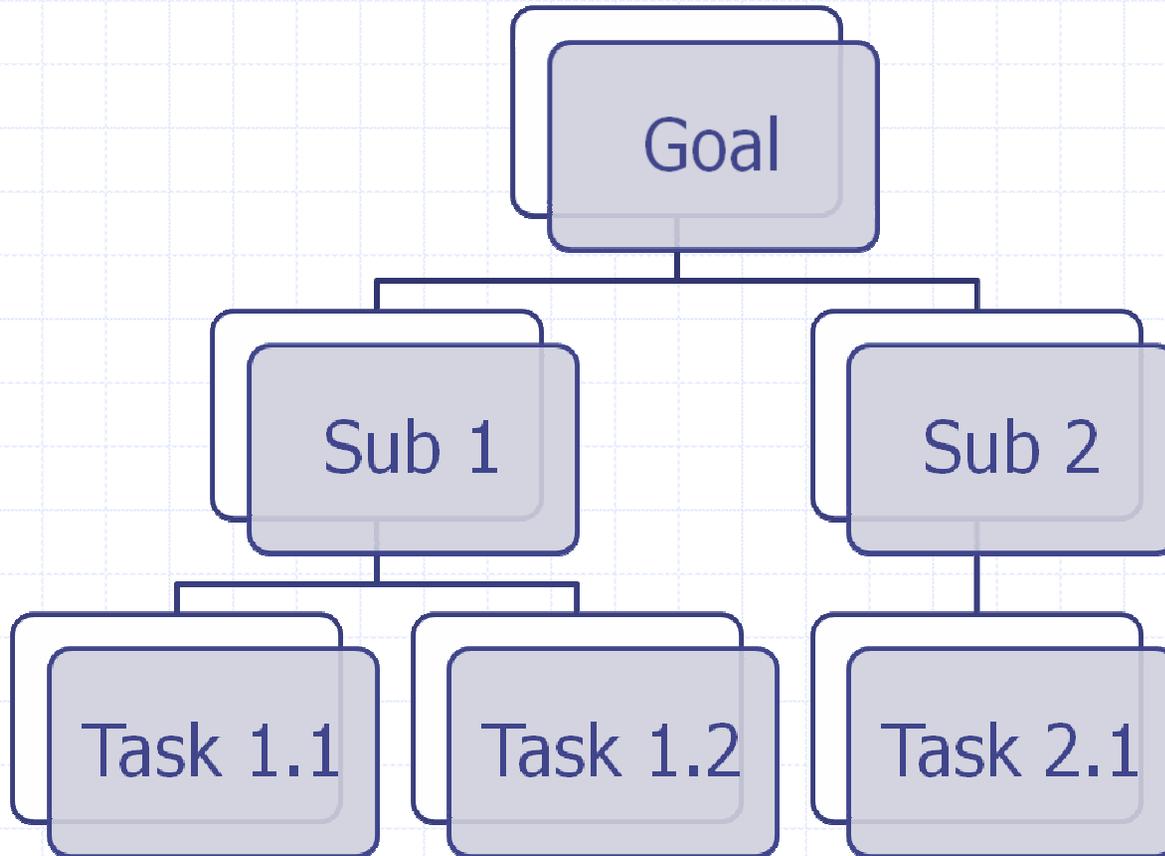
HFI-DTC ([www.hfidtc.com](http://www.hfidtc.com))

Awarded the President's  
Medal by Ergonomics  
Society





# Hierarchical Task Analysis

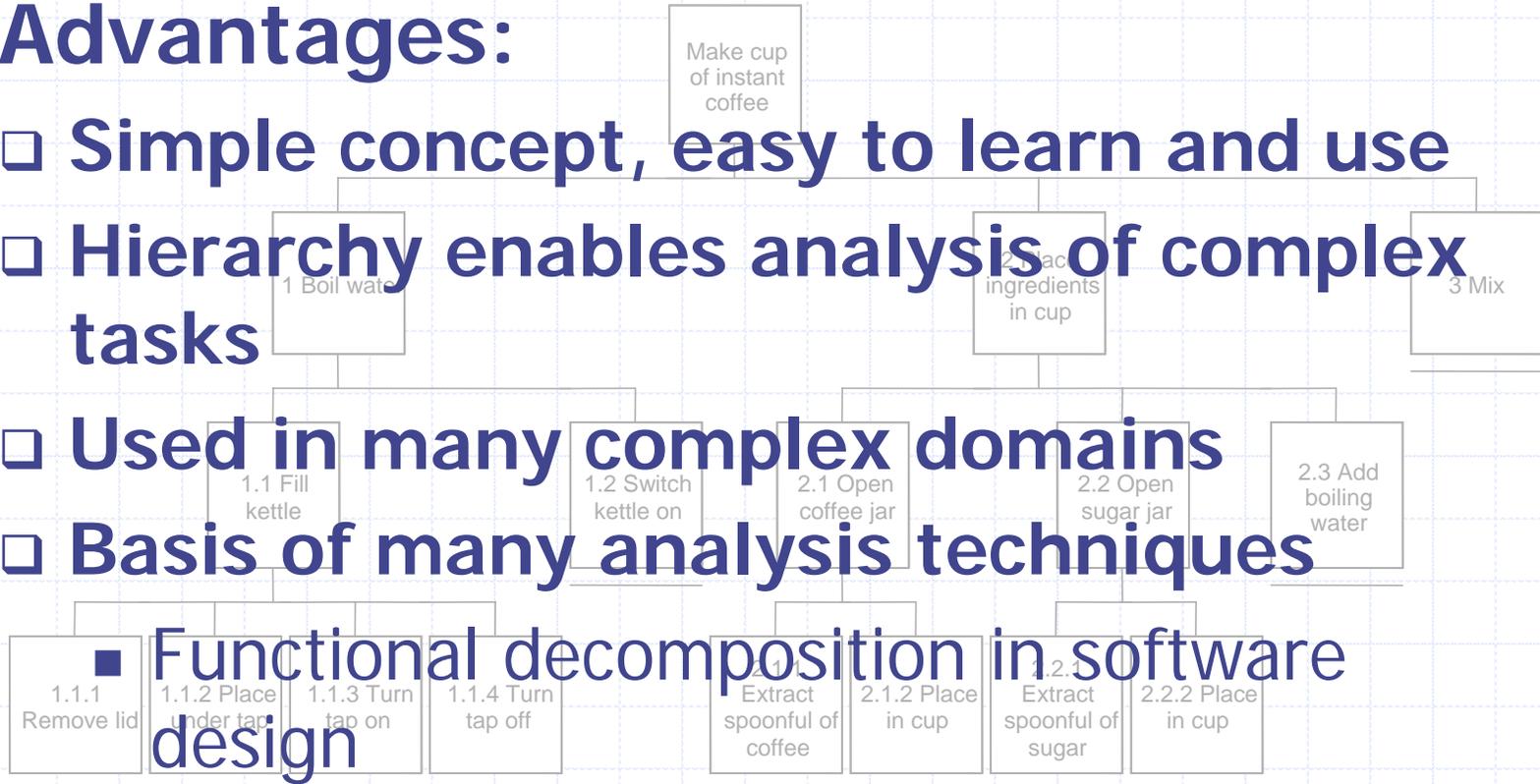




# Hierarchical Task Analysis

## Advantages:

- ❑ Simple concept, easy to learn and use
- ❑ Hierarchy enables analysis of complex tasks
- ❑ Used in many complex domains
- ❑ Basis of many analysis techniques

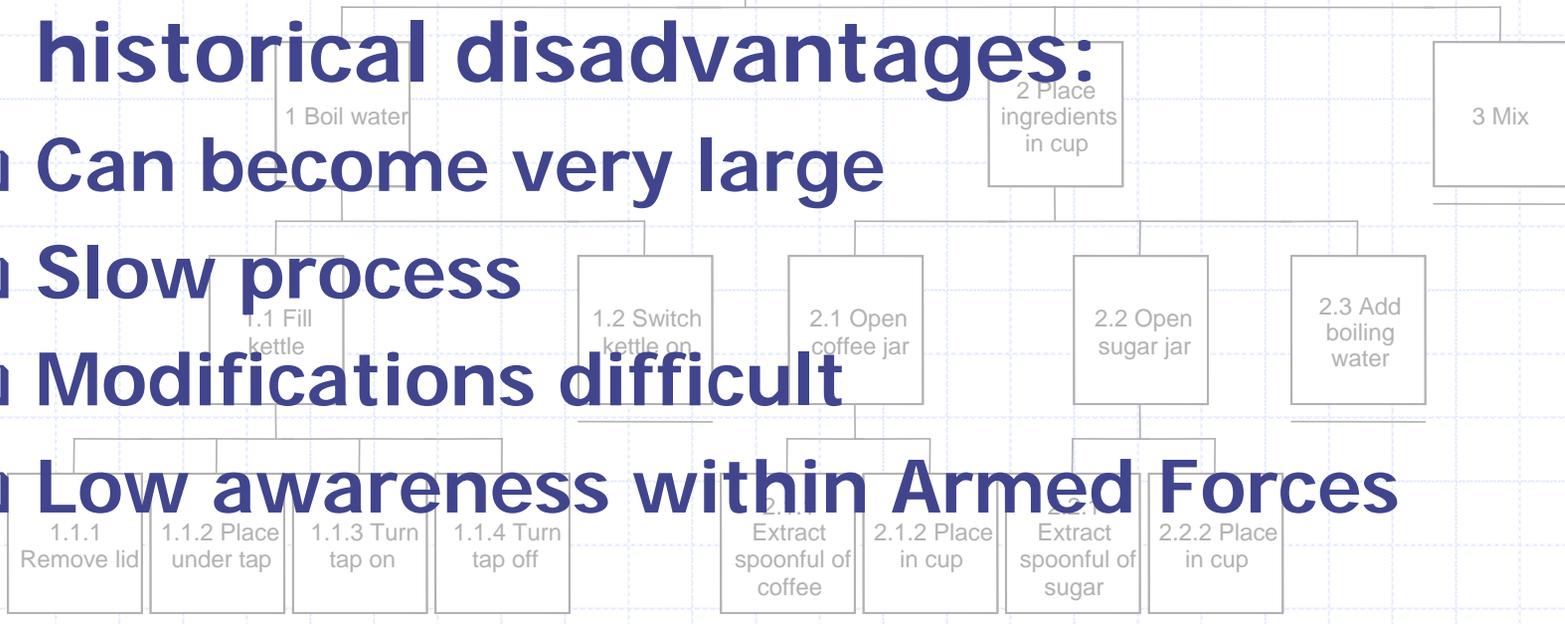




# Hierarchical Task Analysis

In the past, HTA has been performed manually (pencil & paper), with historical disadvantages:

- ❑ Can become very large
- ❑ Slow process
- ❑ Modifications difficult
- ❑ Low awareness within Armed Forces





# THE HTA TOOL

The  
Distribution  
CD





# THE HTA TOOL

- ❑ Meets need for computerised HTA
- ❑ Developed by HFI-DTC (an MoD initiative)
  - Latest release 1.1
- ❑ Freely available – used Internationally
- ❑ All Army Training Advisors issued with copy
- ❑ Other users include DSTL, RAF, REME TDT, DSTO, DRDC, BAE, Ael, Coca Cola...



# Planning for Uncertainty

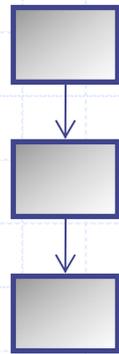
**“The best-laid plans of mice and men  
often go awry” – Robert Burns**



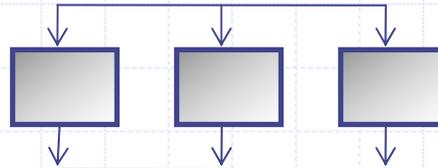


# Planning for Uncertainty

## Tool's Plan Editor:

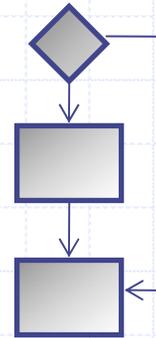


Linear



Paralle

|

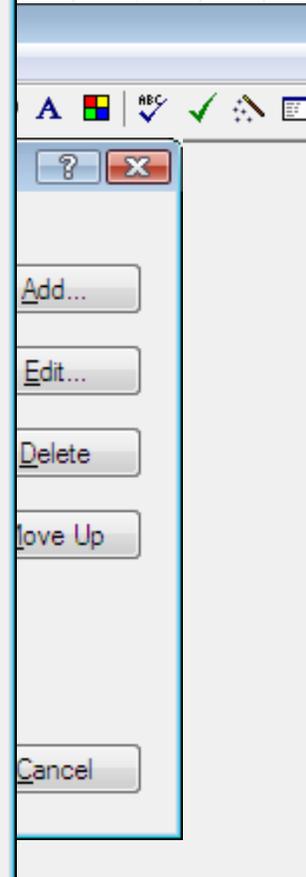
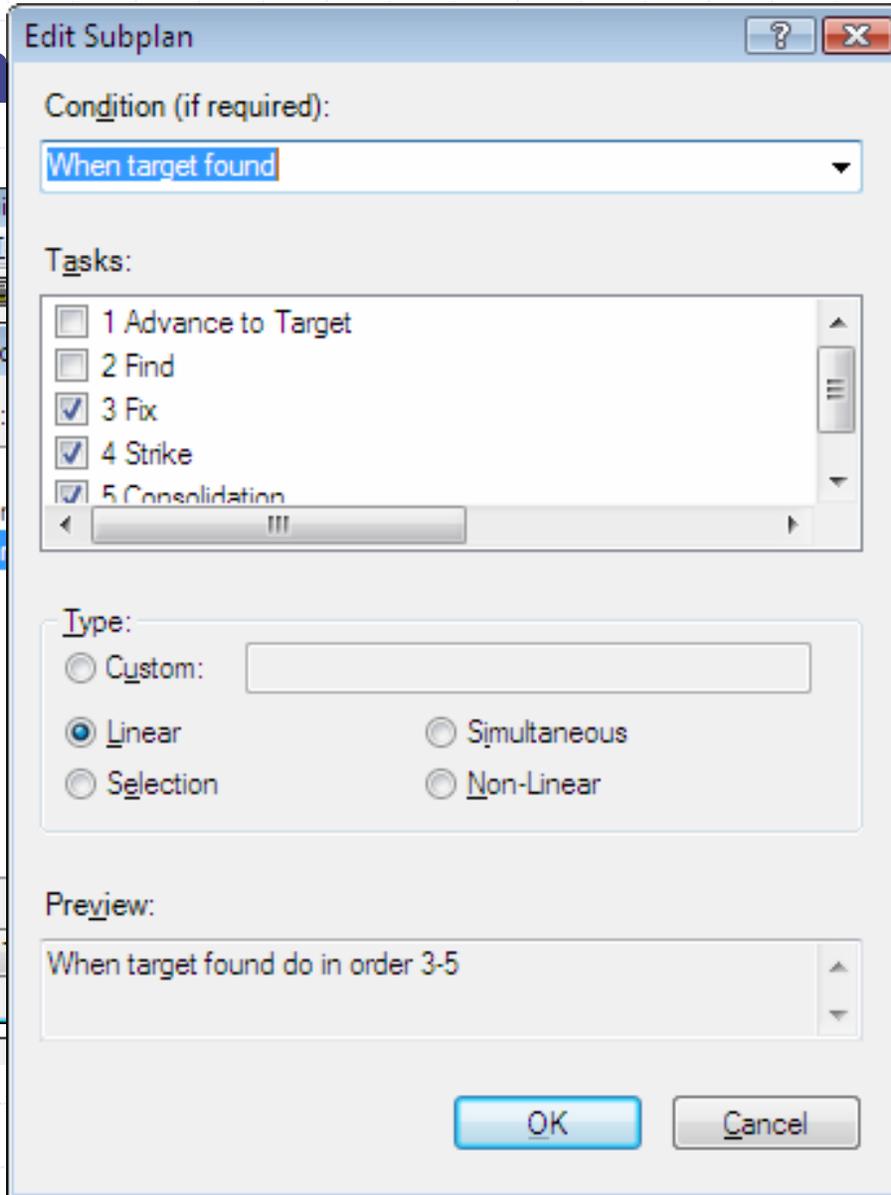
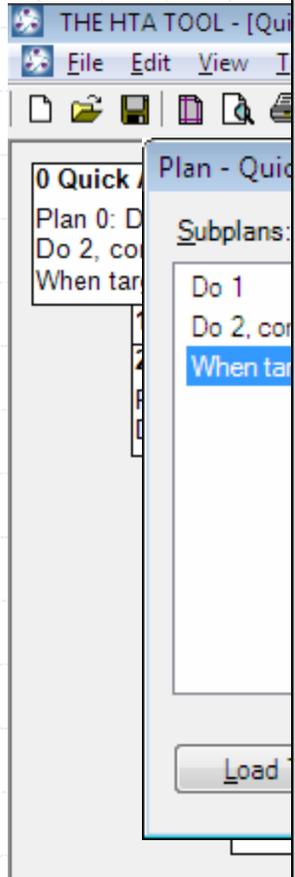


Conditional



# Plan

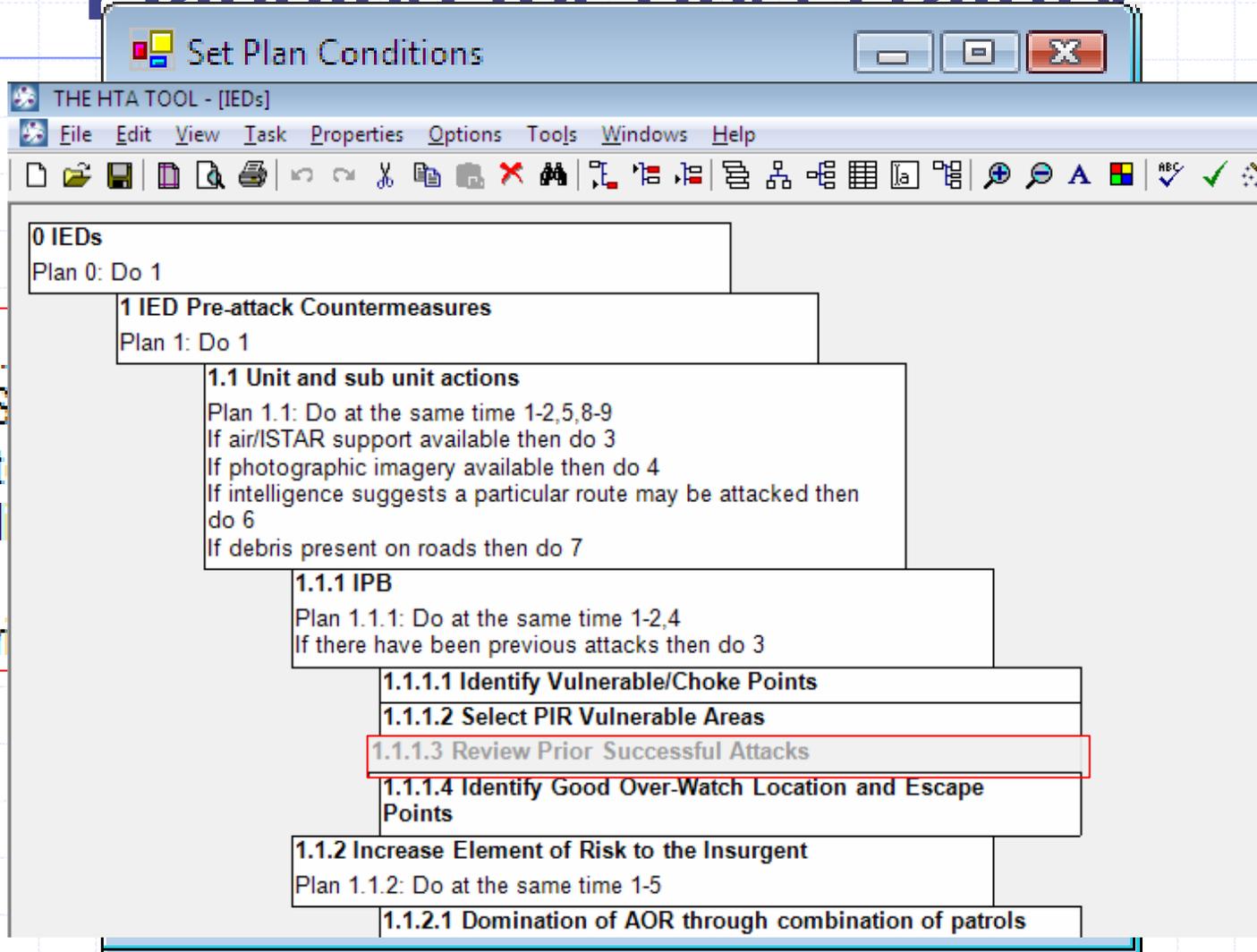
# nty





# Planning for Uncertainty

Plan 1.  
If air/IS  
If phot  
If intell  
do 6  
If debr





# Task Allocation Techniques

**Task Allocation follows Task Analysis**

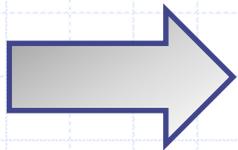
**Factors:**

- Workload**
- Criticality**
- Cost**
- Training/Knowledge required**



# Task Allocation Techniques

**Color-coding - allocate individuals, teams, services or human/computer**



**Example: Chemical Incident**

Police, Fire, Hospital, Chemical Response



# Task Allocation Techniques

**THE HTA TOOL - [Deal with chemical incident]**

File Edit View Task Properties Options Tools Windows Help

0 Deal with chemical incident  
Plan 0: Do in order 1-4  
Notes: TASK: Deal with chemical incident.  
CONTEXT: Remote farm, 1 known casualty, unknown chemical, unknown cause, unknown possible further casualties.  
PERFORMANCE: Ensure safety/protection of people, property and environment in that order.

1 Initiate response to incident  
Plan 1: Do in order 1-3

- 1.1 Contact police informing them of break-in at farmhouse
- 1.2 Inform officer of break-in
- 1.3 Inform caller that assistance is on the way

2 Proceed to scene of incident  
Plan 2: Do in order 1-2

- 2.1 Police proceed to scene  
Plan 2.1: Do in order 1-5

- 2.1.1 Proceed to incident
- 2.1.2 Inform police control of casualty suffering from respiratory problems
- 2.1.3 Capture suspects
- 2.1.4 Gather information from suspects  
Plan 2.1.4: Do in order 1-2

  - 2.1.4.1 Inform police control of possible chemical
  - 2.1.4.2 Inform fire brigade of possible chemical

- 2.1.5 Respond to situation involving chemicals  
Plan 2.1.5: If people can be seen on site then do 1  
If fire brigade in attendance and fire brigade advise safe to so then do 2

Member of public

Police control

Police officer

Hospital

Fire control

Fire squadron

Fire squadron and commander

Fire commander

Chemical supplier and fire control

Chemical supplier



# Task Allocation Techniques

## 3.2.4 Chemical assessment

Plan 3.2.4: Do in order 1-2

If discrepancy between ChemData/ChemSafe information and nature of substance found then do 3

Do in order 4-5

3.2.4.1 Check ChemData

3.2.4.2 Check ChemSafe

3.2.4.3 Contact chemical supplier

Plan 3.2.4.3: Do in order 1-3

3.2.4.3.1 Discuss substance UN number

3.2.4.3.2 Wait for response

3.2.4.3.3 Confirm with fire control



# Task Allocation Techniques

## Add Property (Text, List)

Check ChemData	Fire control
Check ChemSafe	Fire control
Contact chemical supplier Plan 3.2.4.3: Do in order 1-3	Fire control
Discuss substance UN number	Chemical supplier and fire control

Check ChemSafe	Fire control
Contact chemical supplier Plan 3.2.4.3: Do in order 1-3	Fire control
Discuss substance UN number	<input type="checkbox"/> Member of public <input type="checkbox"/> Police control <input type="checkbox"/> Police officer <input type="checkbox"/> Hospital <input checked="" type="checkbox"/> Fire control <input type="checkbox"/> Fire squadron <input type="checkbox"/> Fire commander <input checked="" type="checkbox"/> Chemical supplier
Wait for response	
Confirm with fire control	
Notify commander of updated chemical assessment	
Notify hospital of updated chemical assessment	
Solve incident	
Plan 4: Do in order 1-2	
Decide on course of action	
Begin decontamination process	



# Further Tricks of the Tool

- ❑ Software improves speed & efficiency
- ❑ Intuitive - make changes “on the fly”
- ❑ Alternative views
- ❑ Wizards/checkers to help construct
- ❑ Automatic updates (numbering & plans) and validity checking
- ❑ Merge, print, export analyses and layouts
- ❑ And more...



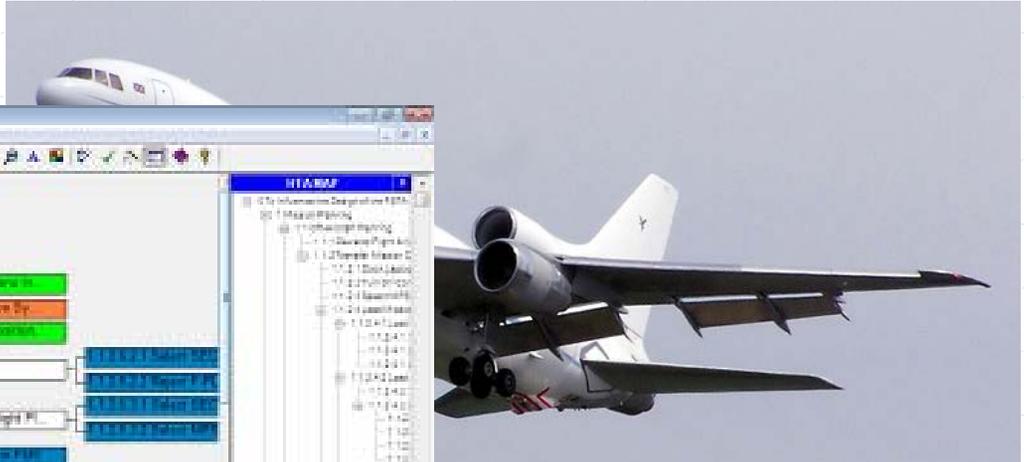
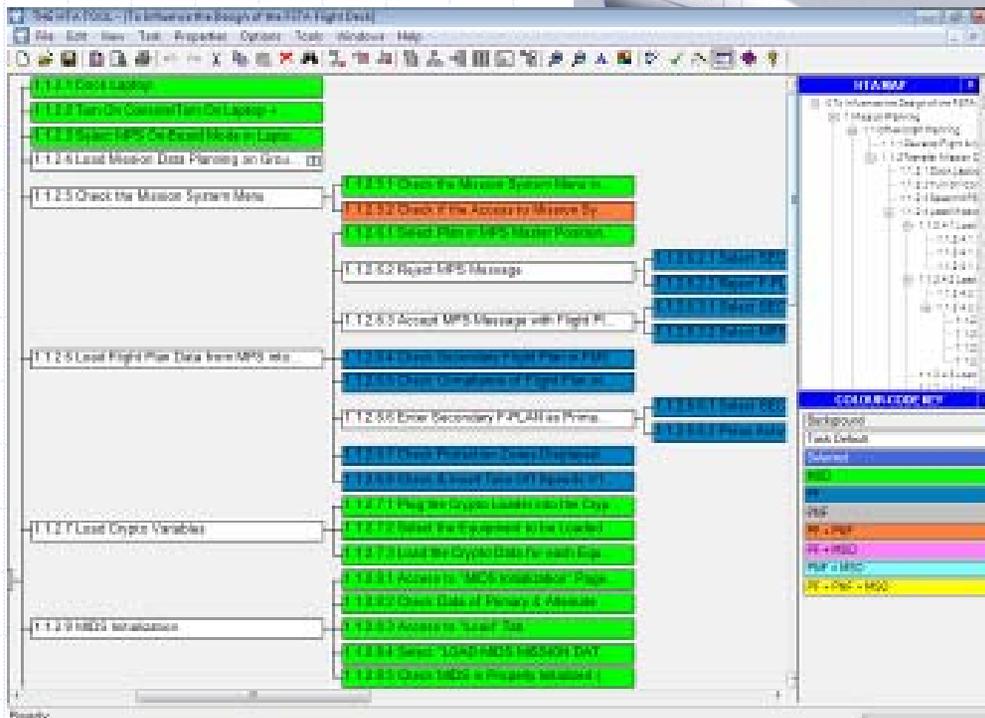
# Case Studies

## BAE Systems using THE HTA TOOL for Euro-Fighter (Typhoon) Mission Planning



# Case Studies

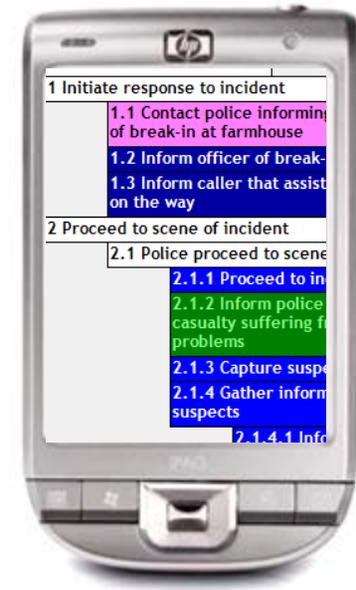
## Future Strategic Tanker Aircraft (FSTA) project





# Development Routes

- ❑ New version of the tool
- ❑ Support for large analyses
- ❑ Time-line, flow-chart based view
- ❑ Web-based and mobile versions





# Questions?

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