

Canadian Forces
Project Land Force ISTAR

Mr David Connell

Department of
National Defence



Intelligence, Surveillance, Target
Acquisition and Reconnaissance



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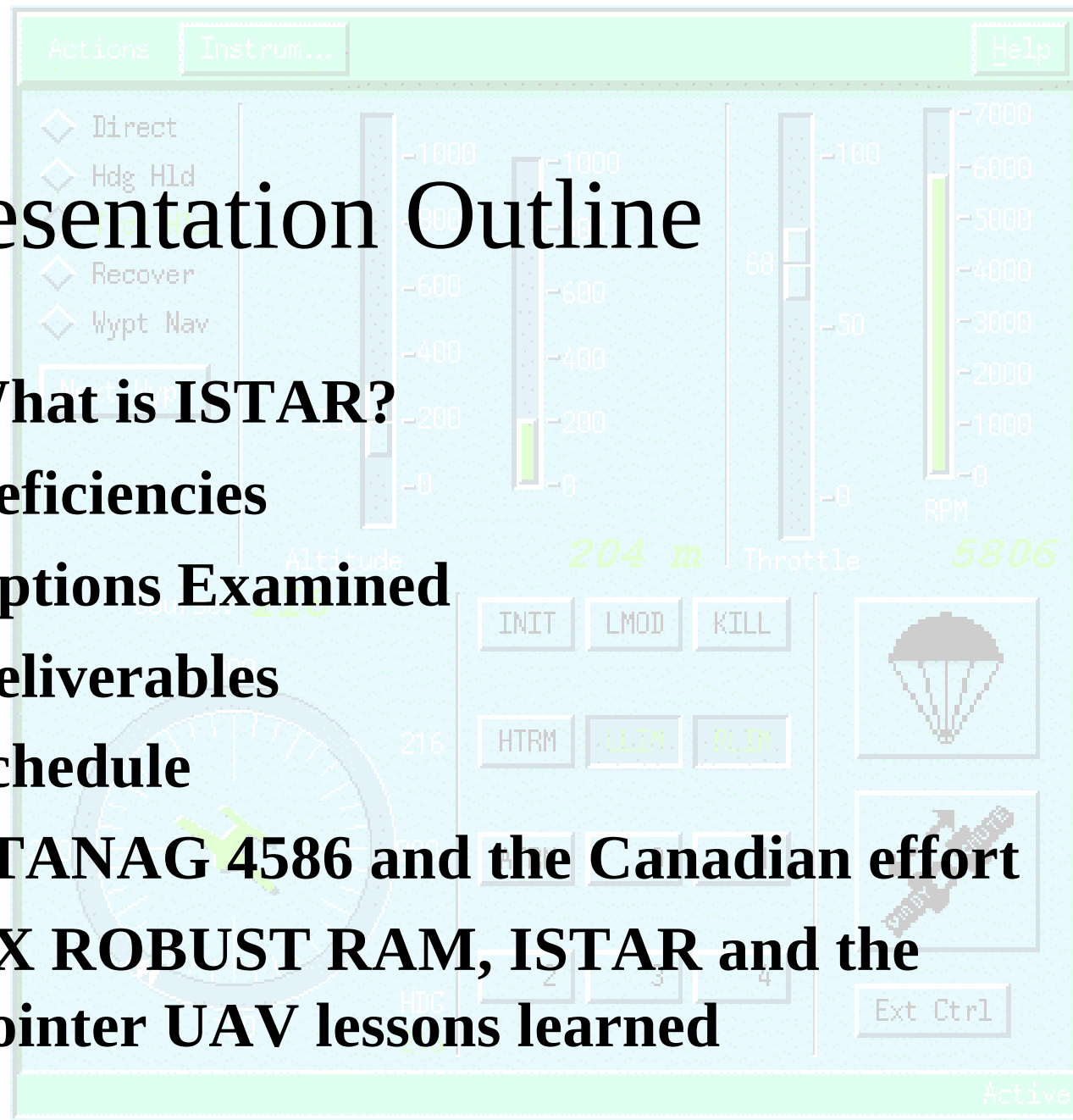
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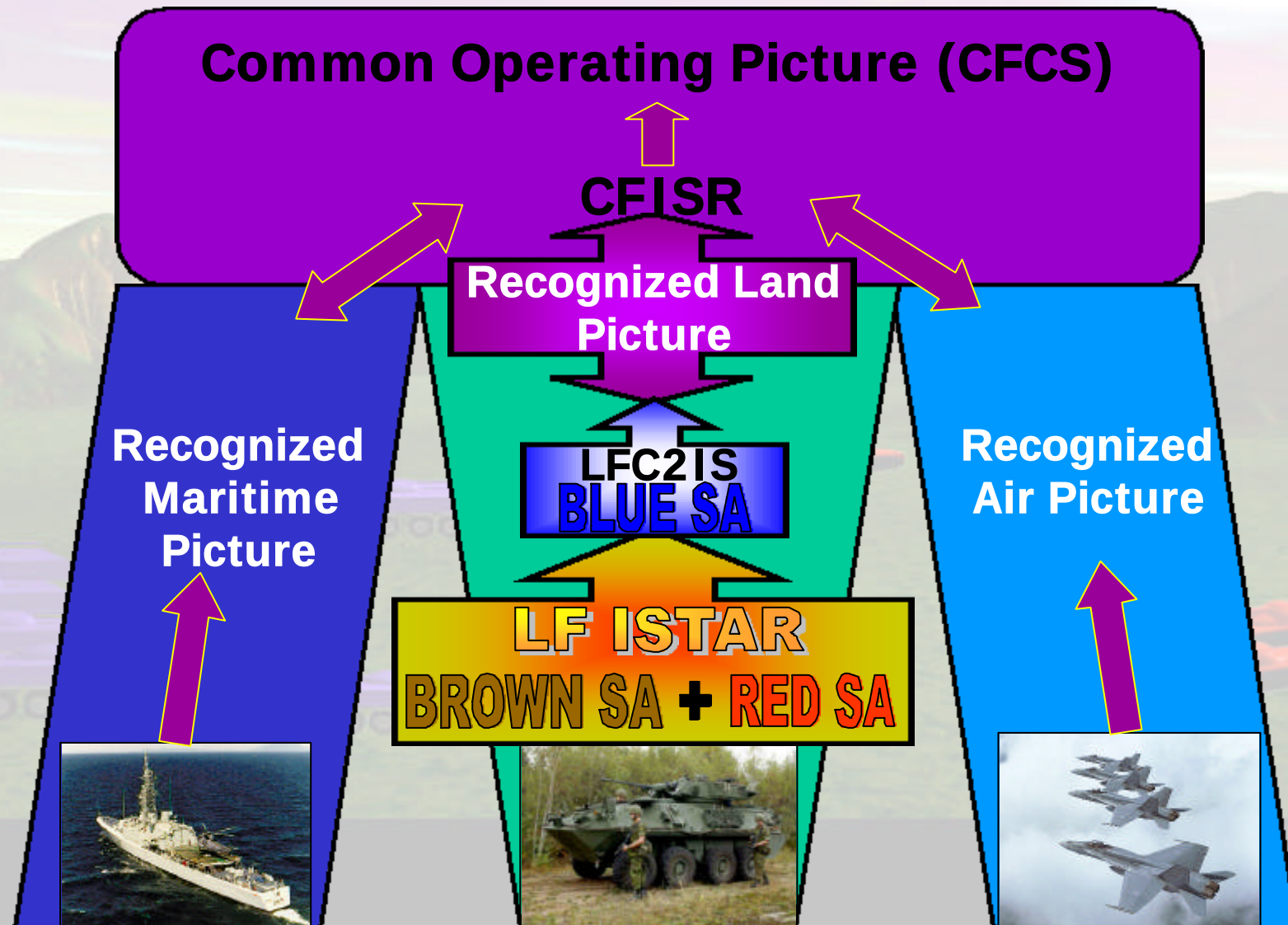
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Presentation Outline

- **What is ISTAR?**
- **Deficiencies**
- **Options Examined**
- **Deliverables**
- **Schedule**
- **STANAG 4586 and the Canadian effort**
- **EX ROBUST RAM, ISTAR and the Pointer UAV lessons learned**



What is LF ISTAR?



Capability Deficiencies

Communications	C2	Sensors
× Lack bandwidth to distribute data & information × Can not download data from aerial vehicles	× Limited, makeshift access to national & Allied ISR data × No tactical level reliability or repeatability for intelligence products × No tactical level ISTAR facility to support C2	× Existing general-purpose sensors not integrated × Limited capability of tactical EW sensors × No capability to conduct reconnaissance beyond line of sight × No capability to detect and locate source of hostile indirect fire



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Project Phases

Identification	Options Analysis	Definition	Implementation
Identify capability deficiency	Formulate options Discard invalid options Assess benefits of remaining options Examine risk Decide which option should be pursued Development	Detailed review Risk assessment Costing of selected option Implementation planning	Implementation Implementation management Implementation monitoring Status Reports Operational Handover Close out



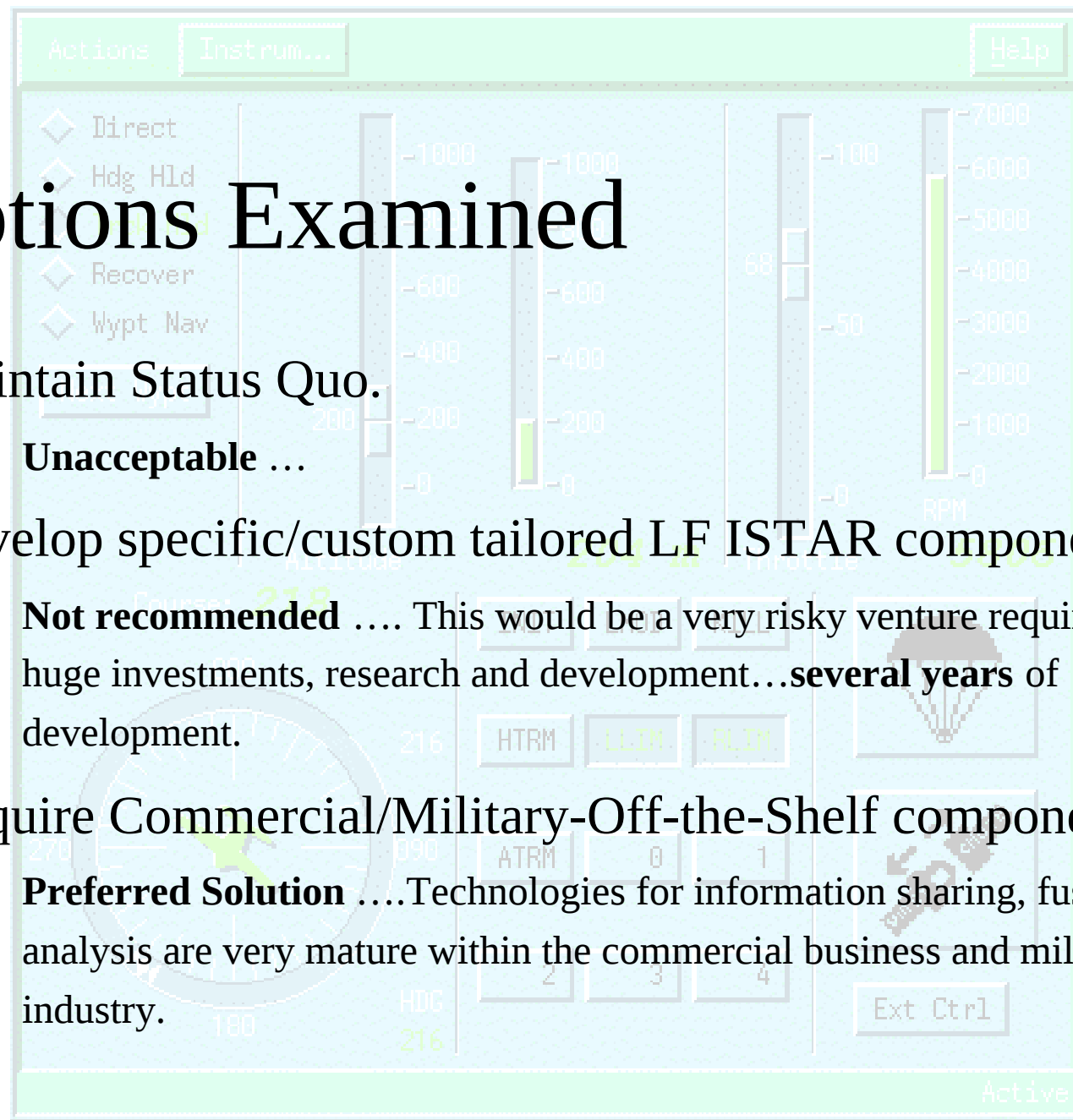
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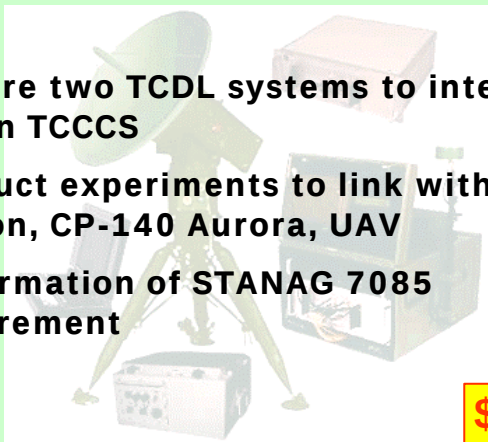
Options Examined

- Maintain Status Quo.
 - **Unacceptable ...**
- Develop specific/custom tailored LF ISTAR components
 - **Not recommended** This would be a very risky venture requiring huge investments, research and development...**several years** of development.
- Acquire Commercial/Military-Off-the-Shelf components
 - **Preferred Solution** Technologies for information sharing, fusion and analysis are very mature within the commercial business and military industry.



Tactical Common Datalink (TCDL)

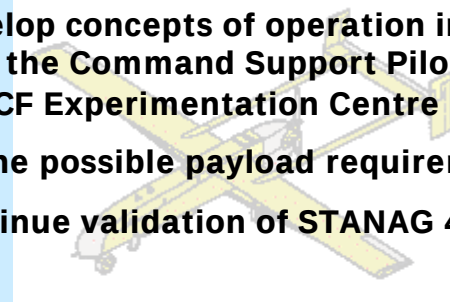
- Acquire two TCDL systems to integrate within TCCCS
- Conduct experiments to link with ERSTA Griffon, CP-140 Aurora, UAV
- Confirmation of STANAG 7085 requirement



\$2.6 M

Tactical UAV Sensors

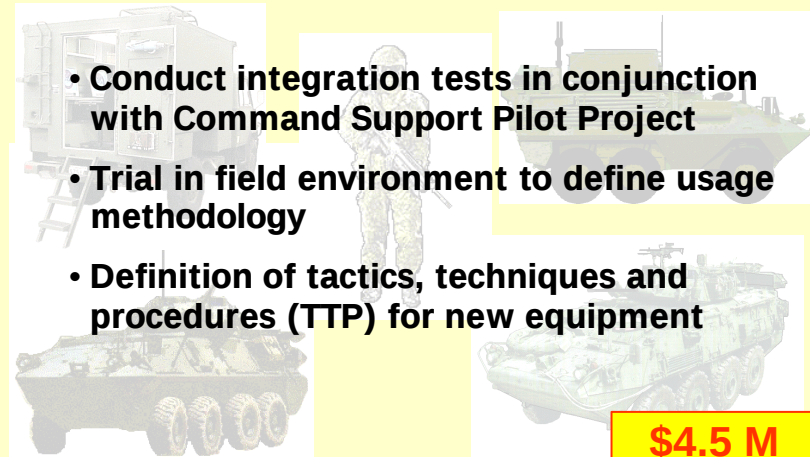
- Develop concepts of operation in concert with the Command Support Pilot Project and CF Experimentation Centre
- Define possible payload requirements
- Continue validation of STANAG 4586



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Acquire Risk Reduction Units

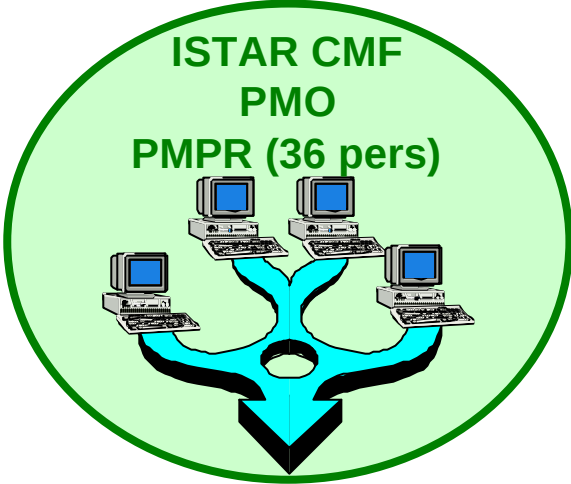
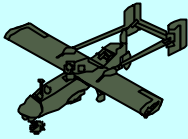
- Conduct integration tests in conjunction with Command Support Pilot Project
- Trial in field environment to define usage methodology
- Definition of tactics, techniques and procedures (TTP) for new equipment



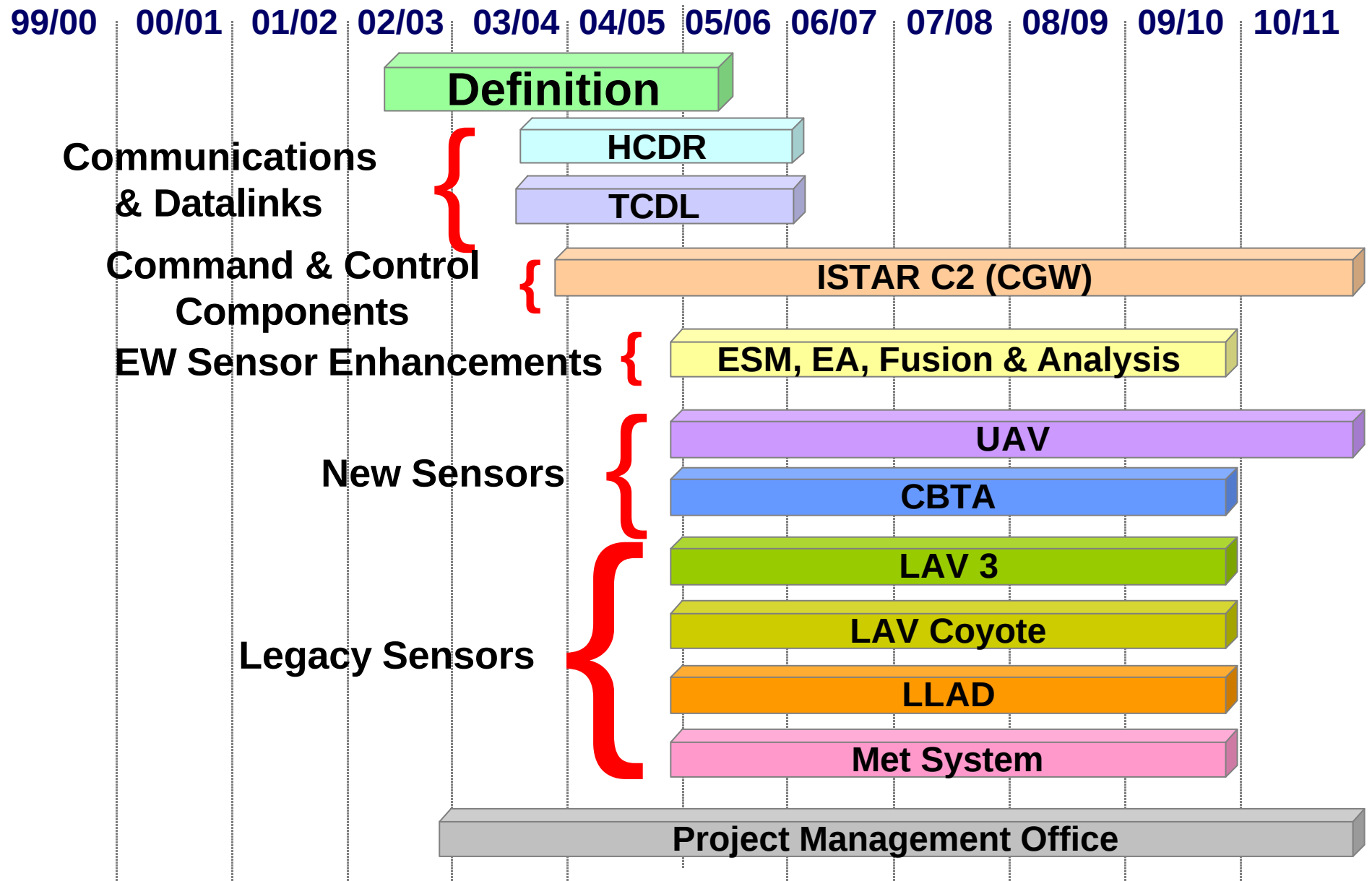
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Project Deliverables

Definition Phase Only

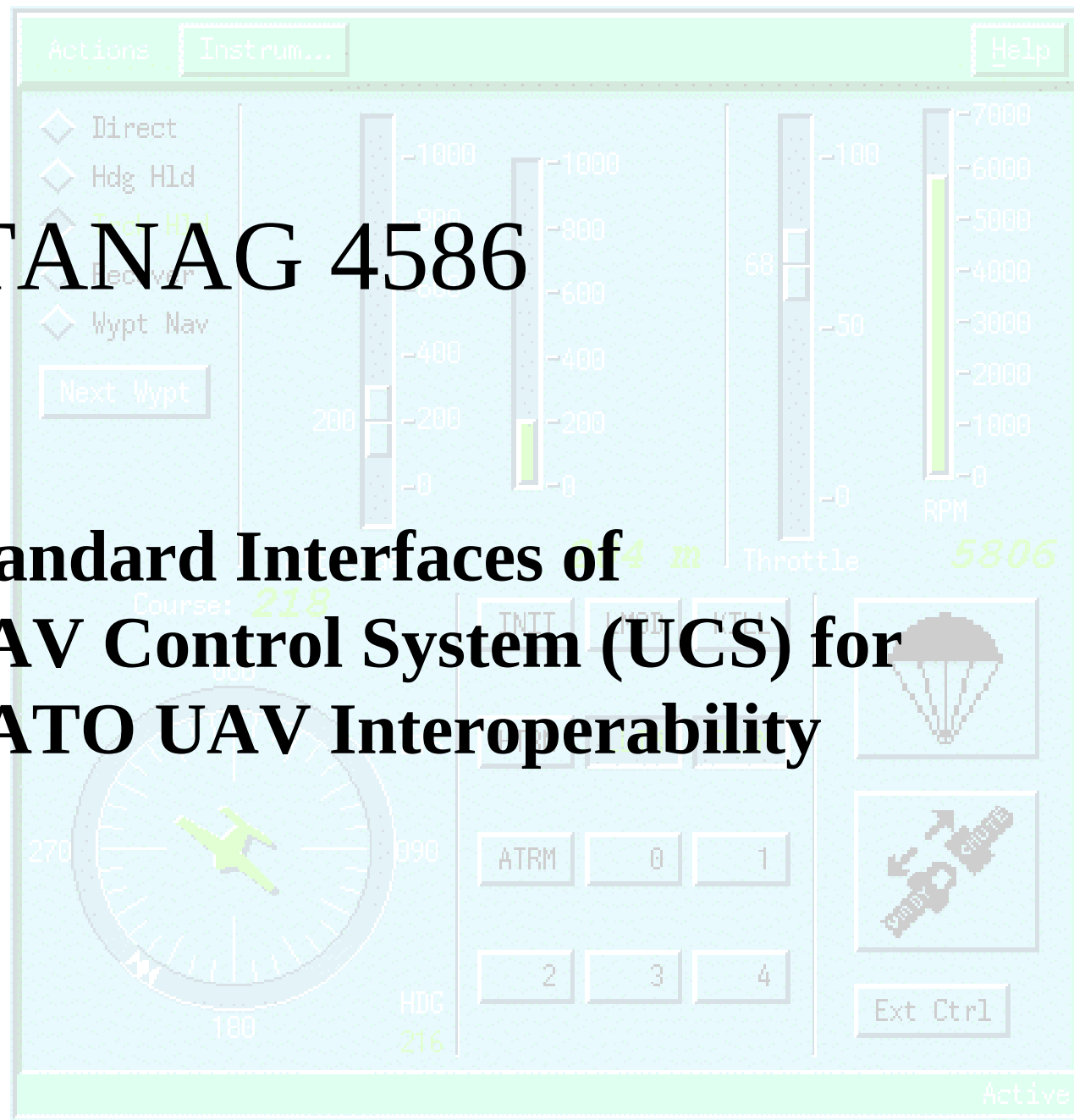
Communications	C2	Sensors	
Acquire and Integrate	Establish PMO/Configuration Management Facility ISTAR CMF PMO PMPR (36 pers) 	Tactical UAV Sensors 	Weapon Locating Sensors 
High Capacity Data Radio (HCDR) 		Enhancements to EW Sensors. 	
Tactical Common Datalink (TCDL) 	Acquire Risk Reduction Units 	Enhance Existing Sensors ADATS SKYguard Met LAV 3 LAV Recce 	

Project Schedule



STANAG 4586

Standard Interfaces of UAV Control System (UCS) for NATO UAV Interoperability



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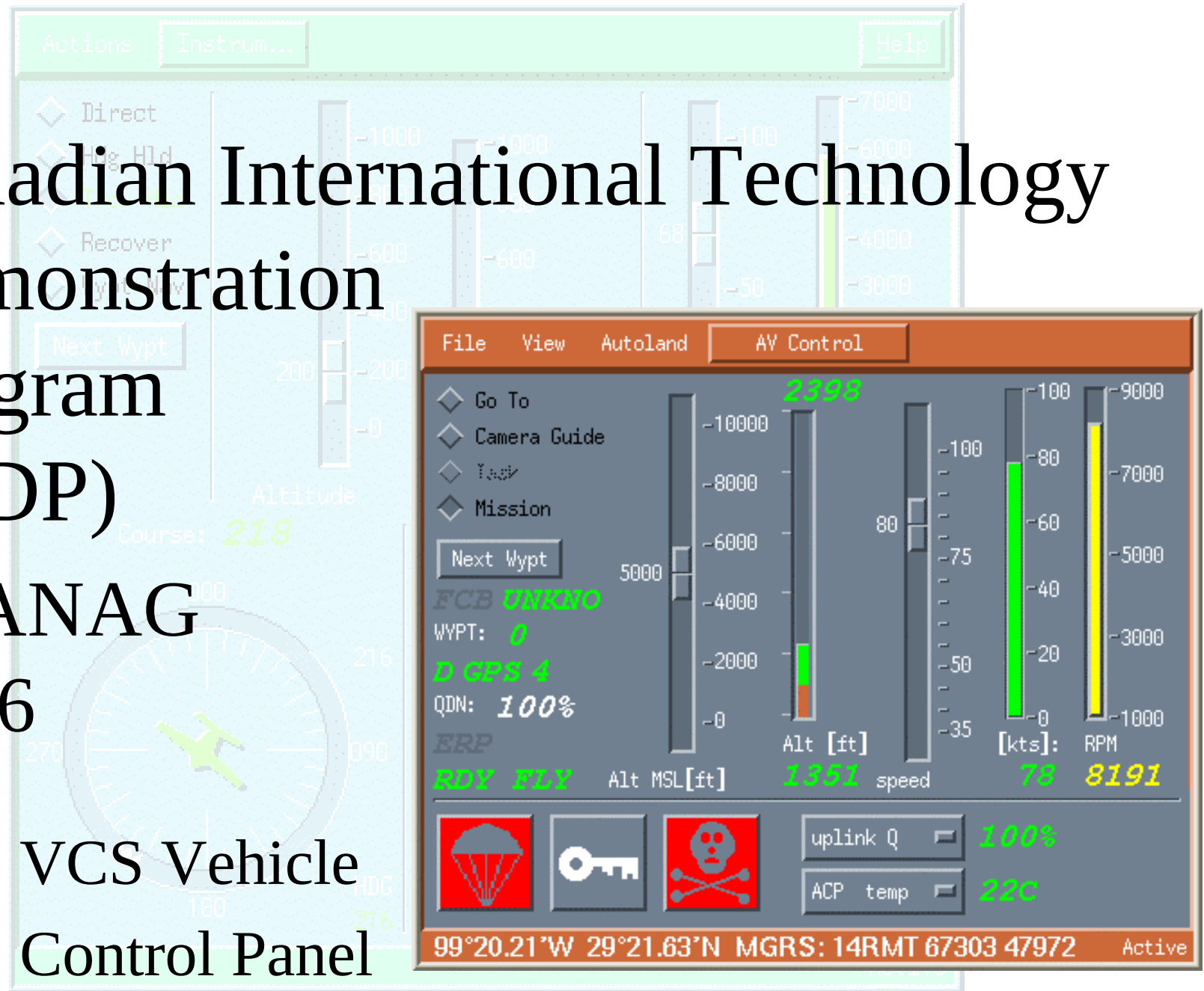
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Canadian International Technology Demonstration

Program (ITDP)

STANAG
4586

VCS Vehicle
Control Panel



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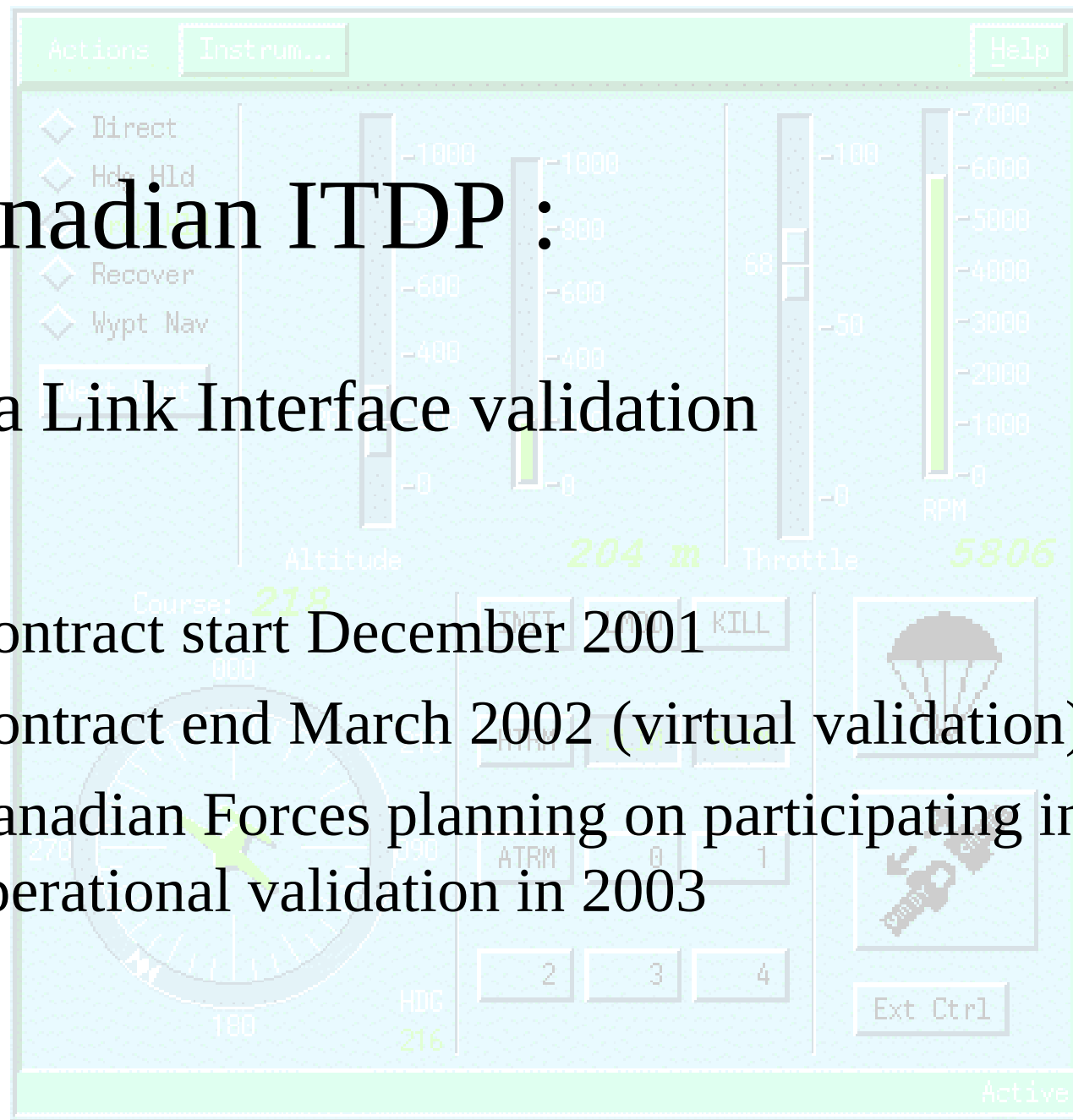
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Canadian ITDP :

Data Link Interface validation

- Contract start December 2001
- Contract end March 2002 (virtual validation)
- Canadian Forces planning on participating in US operational validation in 2003



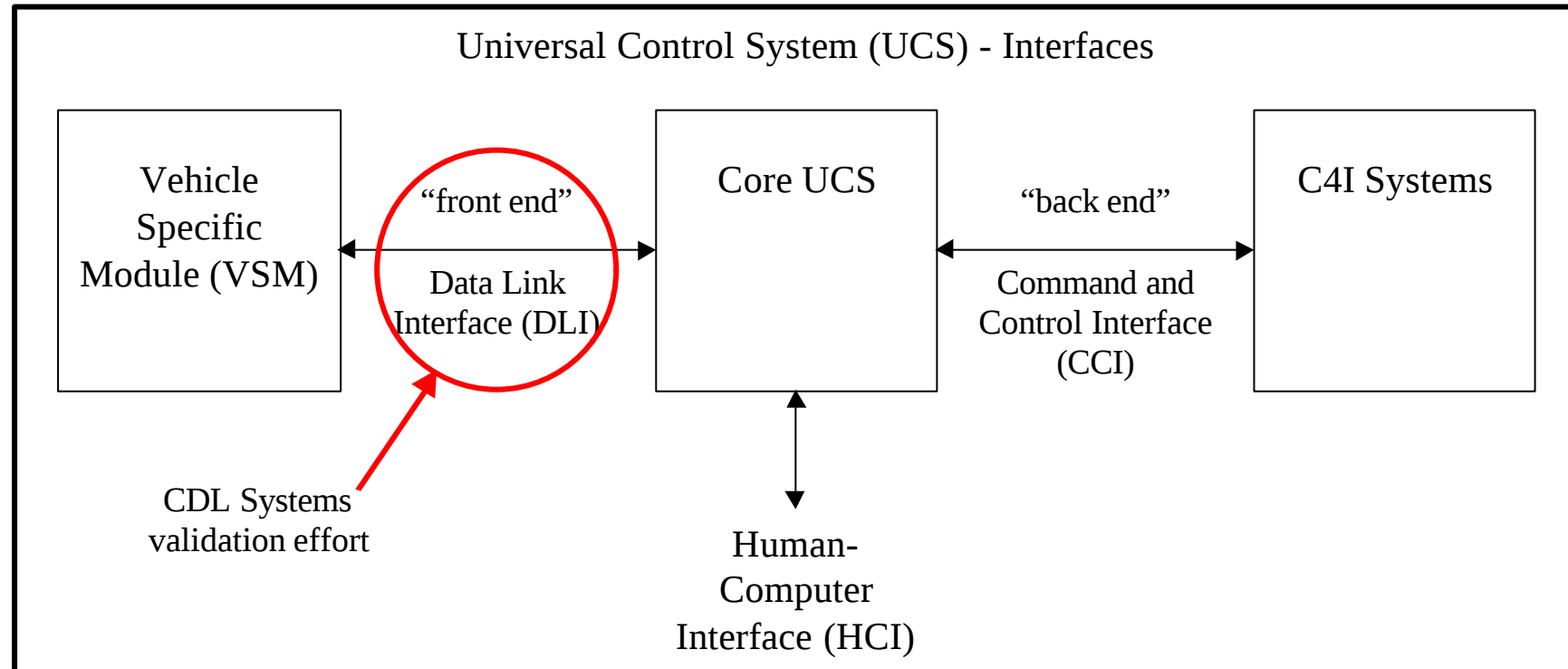
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Canadian ITDP

CDL Systems Ltd Calgary



VCS

CDL *SYSTEMS*



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Vehicle Specific Module

AAI Corp Shadow 200 (US Army
TUAV)

Bombardier CL-327 Guardian



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EX ROBUST RAM



Flights 12 - 24 April 02
Western Canada

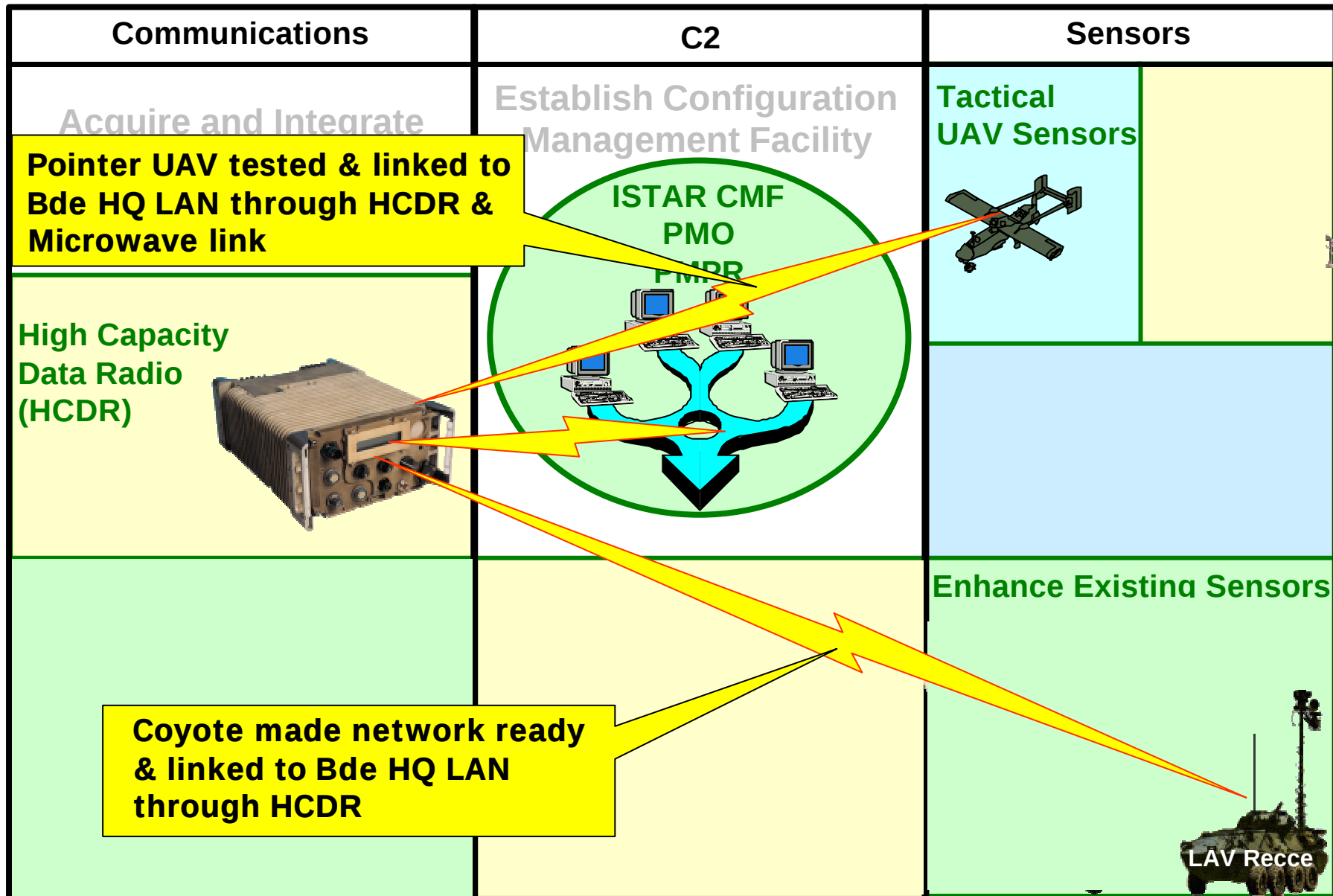


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Ex Robust Ram - ISTAR Results



Status - Sub-Tactical UAV

- Pointer UAV is excellent. Easy to operate, quick response (5 minutes between flights) and well suited to Recce Sqn tasks. Despite high winds (35 kts +)...Pointer could always fly ... always extend the horizon of forward troops such as Coyote!

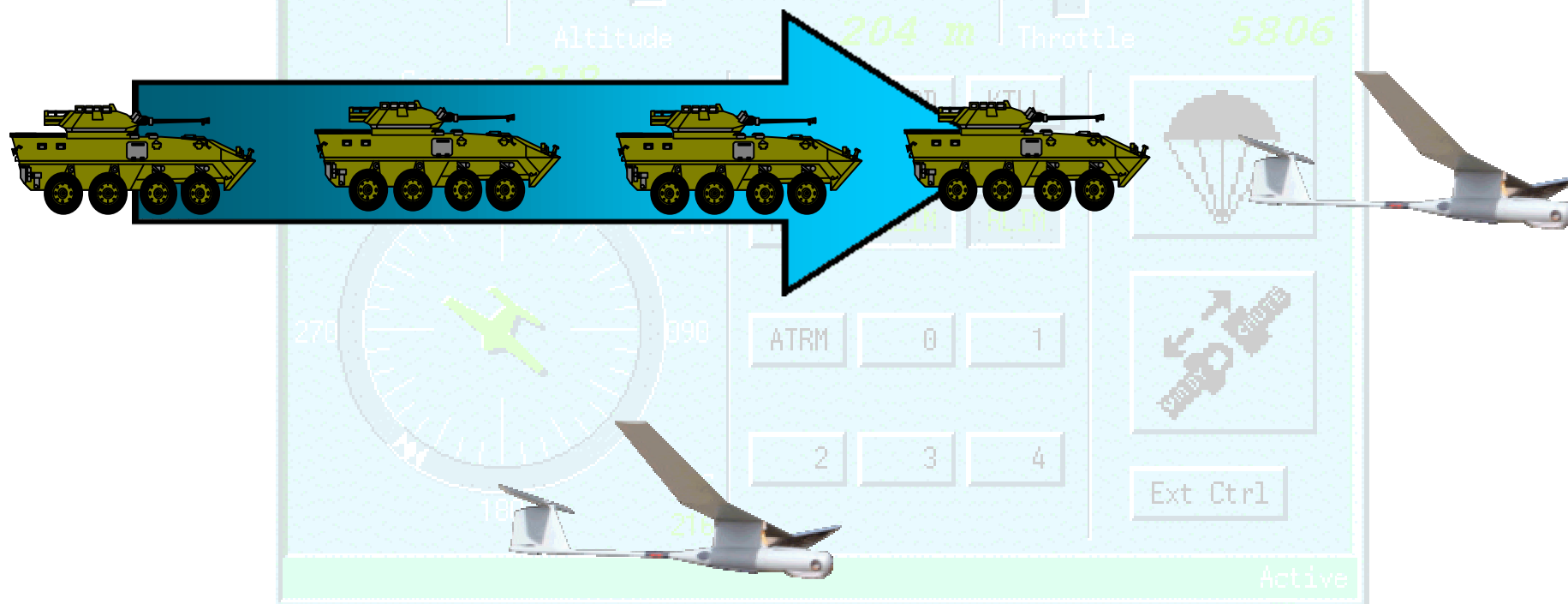


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Combat Team Commander's Personal Air Patrol On the Move!



Canadian Forces Project Land Force ISTAR Contacts

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- Project Manager
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- Deputy Project Manager (UAV)
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