Annex A to: SIMULATION AND DEFENCE CAPABILITY – EXAMPLES – Page 1

SIMULATION EXAMPLE	APPLICATION		IMPLICATION FOR CAPABILITY				
	Training	Decision Support	Force Structure	Personnel Readiness	Equipment Readiness	Sustainability	Capability Development Process
Aircraft Flight Simulators and similar training devices • Examples: – B707 Flight Simulator – C130 H and C130J Flight Simulators – Blackhawk Mission Simulator – F111 Mission Simulator	✓		• Release of aircraft from training to operational tasks, eg – B707, 500 hours – Blackhawk, three aircraft • Mission specific training for work-up to OLOC	• Training in sequences which are hazardous or impossible in the real aircraft • Greater benefit from training on the real equipment through better preparation via simulator • Ability to undertake mission-related training in the absence of other mission participants	• Longer intervals between scheduled maintenance though transfer of landing training from the aircraft (Landings are the typical unit of measure of aircraft life)	• Preparation and assessment of rotation personnel and equipment prior to deployment to area of operations	
Weapon Training Simulation System (WTSS) • A simulator for small arms training. Twelve are in service throughout the ADF, with a further four under procurement.	✓		• Supplements the availability of live ranges when achieving and maintaining OLOC (all weather and day/night access)	• Enhanced opportunities to achieve and maintain core skills for MLOC • Higher trainee skill and confidence when training on real equipment	• Reduced wear and tear on real equipment	• Preparation and assessment of rotation personnel and equipment prior to deployment to area of operations	
Combat Training Centre – Live • An instrumented 'live' simulation system to prepare sub-unit combined arms teams for combat	✓		• A practicable method to achieve and assess OLOC prior to deployment	• Combat-focussed team training in a demanding but safe environment		• Theatre-specific preparation of rotation forces, eg Timor Prelude exercises	• Provides data on battlespace interactions which informs the capability development process
Distributed Simulation Systems • Simulations which allow geographically separated people to train together. • Often involve 'stimulating' real equipment with simulated scenarios. • Examples: – Coalition Readiness Management System (Creams) – FFG On Board Training System (when linked to other ships) – Battle Force Tactical Training (BFTT) (US Navy)	✓		• Ability to undertake collective training, including with coalition units, prior to deployment (There is a growing view that ADF elements in future will be precluded from exercises such as RIMPAC unless they 'pass' a pre-exercise simulation-based work-up)	• Increased opportunity to achieve and maintain core skills in situations where effective training relies on the involvement of others	• Ability to test the readiness of combat systems	• Preparation and assessment of rotation personnel and equipment prior to deployment to area of operations	

Annex A to: SIMULATION AND DEFENCE CAPABILITY – EXAMPLES – Page 2

SIMULATION EXAMPLE	APPLICATION		IMPLICATION FOR CAPABILITY				
	Training	Decision Support	Force Structure	Personnel Readiness	Equipment Readiness	Sustainability	Capability Development Process
Joint Semi-Automated Forces (JSAF) • A constructive simulation which allows air, land and sea based entities to interact within the battlespace.	✓	✓	• Development and testing of doctrine	• A practicable means of training operational headquarters staff in large-scale operations • Immerses operational staff in complex scenarios, to inform their judgement in preparation for future operations	• Ability to test the readiness of command and control systems	• Informs the development of concepts and processes for sustainment	• Development and analysis of options for future capability
Simulation Support to Experimentation • Simulation underpins Defence experimentation which, in turn, shapes future force structure and supports doctrine development for the force-in-being		✓	• Development and testing of doctrine	• Immerses operational staff in complex scenarios, to inform their judgement in preparation for future operations		• Development and testing of concepts and processes for sustainment	• Development and analysis of options for future capability
BattleModel • A constructive simulation which allows the interactions between entities and other entities or the environment to be explored • Used for: – Air 7000 capability options development and assessment. – Wedgetail tender evaluation – Wedgetail tactics development prior to introduction to service (Armchair Warrior) – AP-3C tactics development		✓	• Development and testing of doctrine – and prior to introduction into service of the real equipment	• Individual and crew training – and prior to introduction into service of the real equipment	• Identifies the elements of equipment readiness which have most significant impact on capability	• Informs the development of concepts and processes for sustainment	• Development and assessment of capability options • Comparison and selection of competing platforms
NCW Simulation – DARNOS • A constructive simulation which will represent existing and proposed NCW elements		✓					• Analysis of the role of new acquisitions in an NCW context • Exploration of network architecture options • Balance of investment analysis
Aviation Capability Improvement • The Aviation Capability Improvement Team used a simulation to explore the implications of changes to the ADF's Pilot Training System		✓		• Increased effectiveness of the training system			• Optimised delivery of one of the Fundamental Inputs to Capability