Executive summary

Boeing Defence Australia (BDA) is the Contractor to the Commonwealth of Australia (CoA) under Project Air 5077 Phase 5A for the provision of an Interoperability Compliance Upgrade to the E-7A Wedgetail Aircraft to the Royal Australian Air Force (RAAF).

This Public Australian Industry Capability (AIC) plan details Boeing Defence Australia’s planned arrangements and commitments for implementing and managing AIC involvement for Air 5077 Phase 5A at RAAF Base Williamtown. Air 5077 Phase 5A introduces modifications to the following Mission Systems and their associated support segments:

- Mode 5 Identification Friend or Foe (IFF) Transponder
- Mode 5 IFF Interrogator
- Datalink Line of Sight (LoS)
- Cryptographic Modernisation (Radios)
- Wideband Internet Protocol (IP) Communications
- Broadcast Intelligence upgrade to Common Interactive Broadcast

Modifications to the on board Mission Computing system are also necessary to meet the increased data throughput needs of the modifications and address emerging computer obsolescence issues.

The Supplies for Air 5077 Phase 5A will be provided by Boeing Defence Australia as the Contractor under Contract Number DMO/ASD/00361/2015 with a nominal expiry date of 31 January 2019. The Contract Price for Stage 1 is approximately AUD329M, of which approximately $93.5M will be delivered by Australian Industry.

This Contract includes Stage 1. All other stages (Stage 2 and 3) will be contracted via Contract Change Proposal at a later date. This AIC Plan will also be updated as the Contract is extended.

Within these Stages there will be a three Release process, 0.5, 1 and 2. Release 0.5 covers ADS-B-Out, Mode 5, Mode S and TCAS 7.1 IFF Transponder with Release 1 focusing on achieving Mode 5 IFF Interrogator Level 1 on two aircraft in early 2019. The second Release will deliver the remaining scope of work, including the retrofit of the first two aircraft.

Stages 1 includes:

- Release 0.5 to incorporate ADS-B-Out, Mode 5, Mode S and TCAS 7.1 IFF Transponder
- Release 1 activities to incorporate Mode 5 IFF Interrogator level 1 on two aircraft
- Release 2 design effort, up to Detail Design Review (DDR).
- Software engineering for the first four of seven Mission Computing software builds will be conducted in parallel with design, as schedule risk mitigation.

During Stages 2 and 3, modification implementation, verification and validation will occur for the remaining scope, and the retrofit of the first two aircraft. Included in the modification implementation, a further three software builds are to be completed.
Project AIC objectives are focussed on utilizing Stage 1 activities to establish capabilities transfer from Boeing Defence Space and Security (BDS) that will enable Boeing Defence Australia to assume responsibility for leading all project segments from Stage 2 commencement.

At the completion of the program, BDA expects the project team to have established capabilities that will position the company to further participate in or lead Defence programs such as AEW&C Mid Life Upgrades, to a level and depth currently not contemplated.

In conjunction with the successful delivery of the Capability Upgrades The Boeing Company Corporate Globalization Objectives are to establish, within Australia, an overflow AEW&C engineering sustainment capability.

**Key Offerings for Australian Industry**

The establishment of Boeing Defence Australia as Contractor for the execution of Air 5077 Phase 5A provides the opportunity to train Australian Industry and expand on or obtain experience in a number of fields:

- Complex project management in an International multi-site environment;
- Systems engineering and systems integration in complex software development environment; and
- Complex systems test and evaluation.

The upgrades will be performed by an integrated team led by BDA, supported by a range of subcontractors including, Boeing Defence Space and Security (BDS) (USA) and Northrop Grumman Systems Corporation (NGSC), and additional Australian suppliers including Thales Australia, BAE Systems Australia and CEA Technologies (through NGSC).

**Future Work Opportunities**

Boeing Defence Australia will assume responsibility for the core activity under the Contract, along with the identified subcontractors above. Boeing Defence Australia is committed to developing AIC in Australia and has levied the requirement to include Australian industry on the core team of subcontractors.

Boeing Defence Australia has a demonstrated history of engaging and developing Australian Small to Medium Enterprises (SMEs); ensuring funding from programs is not exclusively held at the prime level but flowed to Small to Medium Enterprises (SMEs) where appropriate. Boeing Defence Australia undertakes a structured approach to industry engagement in Australia. Boeing Defence Australia’s Supply Chain Management (SCM) function identifies Australian suppliers that can support Boeing Defence Australia’s Australian operations at a national level.

This is done through utilising Boeing Defence Australia’s existing Supplier Database, in addition to working with organisations such as the Australian Industry Defence Network (AIDN), Defence Industry Innovation Centre (DiIC) and the State Business Access Offices (BAOs) to identify new Small to Medium Enterprises (SMEs) that may have the capabilities sought by Boeing Defence Australia and participating in capability matching events. Concurrently, each Boeing Defence Australia site focuses on identifying local suppliers to support local Boeing Defence Australia operations in Australia. At a global level—through the Office of Australian Industry Capability (OAIC) team—elements of Australian industry that have the capability to support the Boeing Global Supply Chain are identified. This tiered approach maximises Australian industry involvement at all levels—globally, nationally and locally.

As an Australian company, Boeing Defence Australia at the completion of the Mandatory Interoperability Upgrades will have developed the competence, capacity and commitment to deliver complex system of systems integration projects using Australian resources. These competencies will be enhanced through:

- Establishing a Systems Integration Laboratory (SIL) and Software Engineering Development Environment (EDE) in Brisbane, implemented to support Air 5077 Phase 5A; and
- Expansion of the Airborne Early Warning and Control Support Facility (ASF) in Williamtown and associated EDE, that will provided greater capability and capacity to conduct work of a similar nature in Australia.

Infrastructure improvements, at RAAF Base Williamtown and in Brisbane will provide an environment where those capabilities may be utilised for future product upgrades.
It is anticipated the capability growth obtained through the upgrade program will position BDA to further participate in, or lead Defence programs such as AEW&C mid Life Upgrades, to a level and depth currently not contemplated.

After completion of the design phase which results in Detailed Design Review (DDR), areas for additional Australian Industry Participation may be identified. It is envisaged that minor cable and rack manufacturing or resource opportunities will be subjected to make/buy assessments and where the business case supports, this work may be made available to Australian Industry during Stages 2 and 3, design implementation.

**Point of Contact**

The Commercial Manager for Air 5077 Phase 5A is the point of contact for AIC Matters. For opportunities specific to this Contract, suppliers should contact:

Anthony Valkovic Commercial
Manager
Boeing Defence Australia
GPO Box 767
Brisbane QLD 4001
Ph: +61 (0) 7 3306 3261
Email: anthony.valkovic@boeing.com

5A Program Manager

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