
Capability Statement

Every action assessed
Every mission mastered



coherics



Comprehensive defence
training solutions from
concept to delivery.

Introduction

At Coherics, we are driven by a belief that the quality of a company's training has a direct bearing on their operational effectiveness.

Our goal is to ensure that our client's capabilities reach their potential and excel through the investment in their people.

We specialise in bringing the integration of technology and capability into service, through our training system architecture designs, thus ensuring mission success.



We provide a sovereign capability in training systems for the Australian Government and Defence Industry, via a combination of training expertise and leading-edge data science.



World class, Australia wide

Coherics is headquartered in Adelaide, with offices in Melbourne and Perth to support our growing portfolio of Defence Industry and Government clients. We also have staff onsite within the Australian Defence Force Pilot Training System at RAAF Base East Sale.

The purpose of this capability statement

This capability statement highlights Coherics' range of professional services and products, and demonstrates our ability to work collaboratively with our clients. Together, we can drive the definition, design, development, and integration of customised training systems to streamline the process and meet operational output requirements.





Coherics is uniquely positioned to help defence and government organisations mitigate the risk when integrating new systems by providing platform-agnostic specialised training system generation and integration.

Benjamin Rice — Executive Director

Our vision and mission

Coherics is a values-based organisation. Founded by former Royal Australian Air Force aviators, we live by our vision, mission, and values.

Vision

To be the company our partners trust for excellence in training system evaluation, standardisation, design, and delivery; producing highly capable training systems and graduates who meet increasing capability demands.

Mission

Our goal is to ensure our clients' capabilities are of the highest standards.



We achieve our mission through:



01

Innovative, adaptive, and evidence-based training system architecture designs.



02

Leading-edge training system evaluation and analysis.



03

Best practice training delivery.

Our values

Values

- 1) We are smart people, solving complex problems
- 2) We communicate early, often, clearly, and concisely
- 3) We act deliberately, with integrity, and professionalism
- 4) We love helping our clients



Our people

The strength of our team is in its breadth of expertise and diverse skill set.

Coherics has experts ranging from former military instructors (including fast-jet aviators) to internationally recognised and published academics in the fields of data science, mathematics, and psychology, as well as business and ancillary support services. This vast amount of knowledge and experience enables us to customise a team for any project.

In addition to the leading-edge solutions and outcomes we deliver for our clients, here are four more reasons why we are held in such high regard by our peers and the community:

1) Leadership experience in a variety of high-pressure operational environments, from leading the Royal Australian Air Force Roulette Aerobatic team through to airborne battlespace management during international engagements

2) Our range of academic and professional qualifications, from Doctorate degrees in Physics and Psychology, to Certificates in workplace training and assessment

3) We have authored a number of internationally recognised papers*

4) We have designed and published reports on the future of Computer Generated Force (CGF) software*



*Authoring papers in the field of Live, Virtual, and Constructive (LVC) integration, and designing, executing, and publishing reports on the future of Computer Generated Force (CGF) software, like that of Plexsys Systems' ASCOT 7 product and (Air Defence Ground Environment Simulator (ADGESIM)). A list of publications authored by the Coherics team is available on request.



Coherics employs Australian veterans living with disability and has a focus on employing and empowering veterans to meet their potential in the Defence Industry sector.

We also believe that supporting disability and indigenous rights and opportunities are part of our social responsibility as Australian business leaders. As a result, we are developing our indigenous Reconciliation Action Plan and encourage our partners and clients to join us on our journey.

Company assurance



In addition to being a Defence Industry Security Program member and having IT systems accredited by DISO for Australian Government classified work, Coherics maintains a workforce of security vetted and cleared individuals up to Negative Vetting Level 2. Coherics is also a member of the Australian Collaboration Centre (A3C) where we maintain access to their cyber test range and cohort of experts.

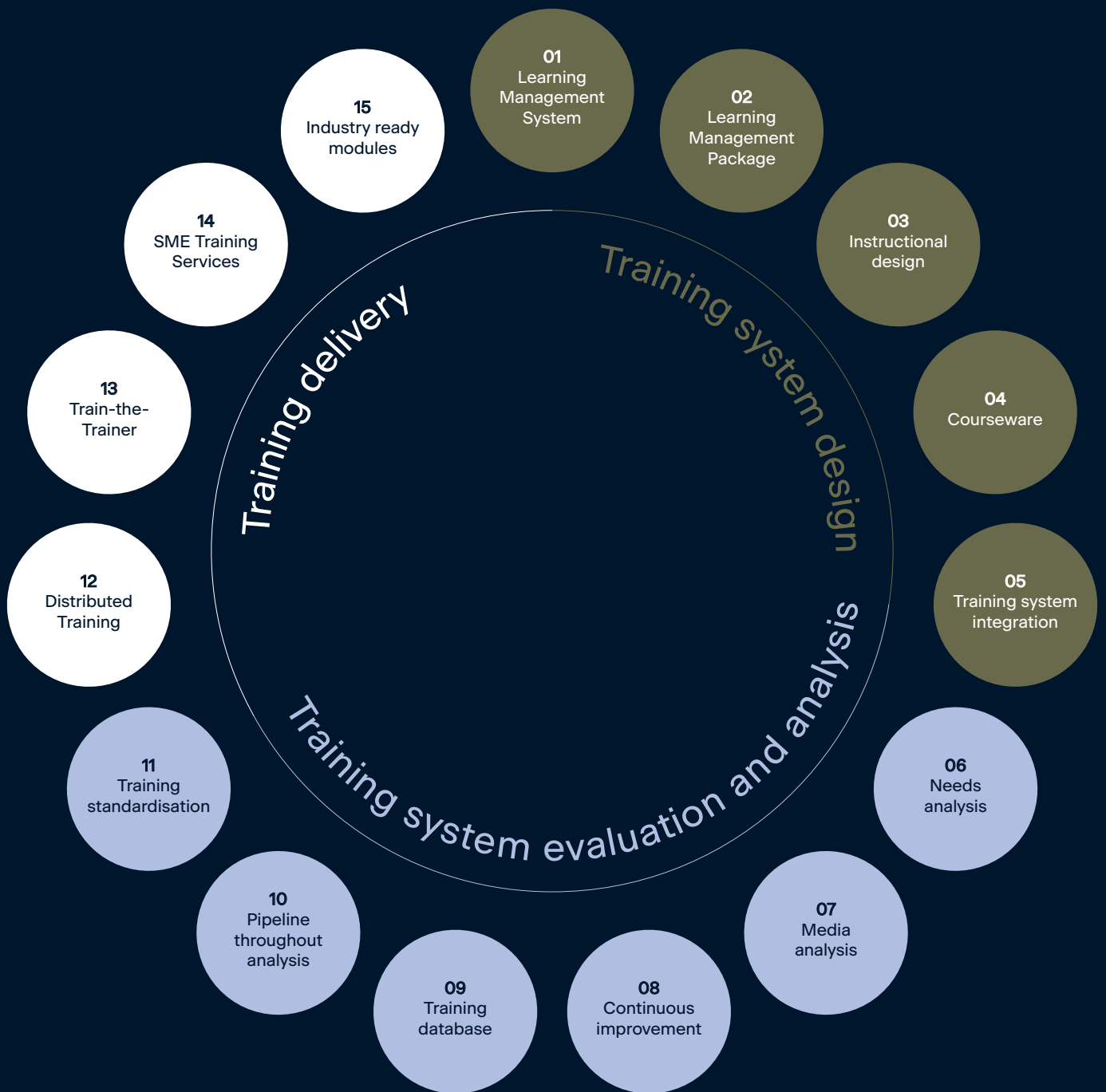
This membership gives us a stake in the South Australian cyber security sector, where we contribute to the advancement of information security practices.

We also work in collaboration with Raytheon Australia to meet ISO 9001 Quality Management Systems, so that our clients can be confident that our consulting, training systems, and evaluation and analysis meet the internationally recognised standard for quality assurance.

Coherics is fully insured with public liability insurance, public indemnity insurance, and workers compensation insurance in all Australian States of operation.



Coherics' Expertise



Capability

Coherics has the requisite skills and experience to ensure that our clients' operational capabilities don't just meet their potential, but exceed it, through investment in their people and the systems that train them.

We deliver superior outcomes via the following services:

- 1) We review of our client's training systems to understand the systems' strengths and weaknesses, delivering recommendations for improvement

- 2) We design all components of a training system from the functional specifications through to the actual lessons and courseware

- 3) We deliver training



Individual services

In addition, we can provide any of the elements in this process as a single service, provided by our expert trainers and project managers:

1) Group or one-on-one training

2) We host specialised workshops for clients wanting to understand human factors and behavioural science

3) We design key performance indicators and training system performance metrics for continuous improvement programs

4) We analyse asset and resource allocation for training systems, e.g. how many aircraft does a squadron or training school need to achieve its desired throughput. We model performance based on this analysis to predict future outcomes

5) We conduct workshops to educate clients and decision makers on best-practice training

6) We consult and assist research facilities to test artificial intelligence in the defence domain





Legacy Training Systems are ripe for disruption; with maturing artificial intelligence, coupled with a deeper understanding of individual learning requirements, fully adaptive training solutions are coming to fruition.

Stephen Baker — Executive Director

Individual services

Coherics has a product suite and a range of services that spans the entirety of complex training systems. Our team specialises in:

- 1) Function Performance Specifications

- 2) Task analysis

- 3) Training Requirement Specifications

- 4) Performance/Training Needs Analyses

- 5) Job Task Profiles

- 6) Gap analyses

- 7) Training databases

- 8) Training system and output standardisation

- 9) Instructional design

- 10) LMPs and associated courseware (including SCORM compliance); and

- 11) Efficacy analyses including continual improvement processes through data driven methodologies

Coherics runs programs and projects of varying sizes. Our project managers will ensure outcomes are delivered on time and on budget.

Our team works directly embedded with our clients and stakeholders to alleviate risk and ensure each step is clearly articulated from the planning stage to contract delivery.



Training system specialist and behavioural scientist workshops

Need to explore ideas, and mind map your training desires and goals? Our staff can help distil your goals and generate a meaningful training system roadmap to boost workforce proficiency.

Coherics has a methodical approach to expanding training efficacy and capability outcomes through specialist workshops. Our team of experienced behavioural scientists, data scientists, and training system specialists can conduct large and small scale bespoke workshops and consulting tasks. These lead to training system capability output strategies and roadmaps, including blueprints for future system acquisition and development.

The introduction of new technology, without the giving of full consideration as to how the training for that new technology will be undertaken, often leads to a reduction in training effectiveness and consequent user proficiency.

Coherics has designed unique procedures for the integration of leading-edge human factors research into our professional service provision plans. This gives us the most up to date research in the cognitive and ergonomic science domains, and also translates to best-practice evaluation and analysis of training solutions and system architecture design.

The Coherics team has extensive operational and analytical experience in a range of modern warfare. Our staff have experience in the vast majority of current CGF products and their integration with 4.5 and 5th generation platforms. This includes the E-7A Wedgetail, F/A18-F, and Distributed Mission Training Systems such as the Defence Science & Technology's Group Joint Air Warfare Battle Laboratory the Air Warfare Centre's Distributed Training Centre (AWC-DTC). Our team also has vast experience working on and assisting our partners to generate LVC integration, or live synthetic blend, and can provide expert advice and analyses to inform training techniques and environments.



Training and performance needs analyses and specifications

Complex training systems require definitive baseline requirements to measure system efficacy and to ensure they are achieving the desired results.

In defence, there are many opportunities for cross-domain-training providing streamlined outputs and interoperability.

Coherics uses specifically developed techniques that provide benefits and efficiencies across all domains. We understand that the Integrated Learning Environment (ILE) can lead to system efficiencies that make the most of cross-training opportunities.

We can also define the requirements for, and of training systems, inclusive of output standards. Through customisable methodologies, Coherics can develop Training Requirements Specification (TRS) and system-wide Function and Performance Specifications (FPS). The Coherics specific framework utilised to generate and capture baseline restrictions and limitations results in a more seamless Learning Management Package (LMP), and courseware development process, and life-cycle.

Needs analyses go hand in hand with baseline requirements to highlight potential training gaps. Without measuring and defining potential training gaps, curricula may be missing the mark resulting in downstream capability gaps. Coherics generates needs analyses, inclusive of gap analyses, and task profiles where appropriate, to define the exact amount and depth of training required, ensuring fit-for-purpose training.

Through a per-project specific approach and, where applicable, Coherics utilises custom-made training databases to demonstrate traceability and system configuration and control, from baseline training requirements through to operational delivery.



Training system generation and delivery

With a clear focus on the objectives and our advanced knowledge of outcome intent and context, Coherics is committed to best practice, student-centred focussed training delivery.

The Learning Management Package is at the very heart of any training system, no matter how large, small, simple, or complex. Coherics brings decades worth of experience in curricula and LMP development, grown through military expertise, to guarantee learning outcomes are achieved.

A training system's Learning Management Package is the glue that binds capability hardware and resources with training products, tools, and specialised instruction. It defines how the trainees and instructors should interact with each media type and selected technology interface, and details resource requirements, lesson plan objectives, layout, and sequence.

Coherics' training system design, delivery, assessment, and improvement framework and methodology has been created specifically for defence training. All components integrate seamlessly across training efficacy, resource utilisation, and output standards. Coherics can consolidate existing vendor-agnostic training hardware into a comprehensive ILE, inclusive of an adaptive training solution and LMP, with compatible adaptive courseware.

Courseware is the focal touchpoint of any training system. Being the first element in the user journey, the impression it creates is everlasting; it therefore needs to be engaging, dynamic, enjoyable, crisp, and targeted.



Coherics develops all manner of courseware, which can be linked to adaptive curricula where applicable, including, but not limited to:

1) Student and instructor guides

2) Training aid displays

3) Handling notes and manuals

4) Mass briefs and other briefing packs

5) Individual lesson content; and

6) Training event scripts

Quality training cannot be delivered effectively and repeatedly unless trainers have detailed direction and a clear purpose for teaching. Our decades of teaching complex military topics in challenging environments, coupled with strong relationships with world leading universities, means Coherics' staff have the experience and gravitas to generate effective courseware and training.



Training system evaluation and analysis

Everyone wants the best return on their investment. Coherics' process of continual improvement, baselining, traceability, and configuration and control, means your company's dollars are well spent.

Improving outcomes for any training system can greatly reduce life cycle cost. Evaluation of student and instructor engagement should be part of every training system, from lesson objectives and courseware updates through to system wide resource utilisation and engagement metrics.

The Coherics team specialises in the analysis of complex training systems and pipelines to define and measure:

- 1) Training efficiency
- 2) Training efficacy and standards
- 3) Training throughout
- 4) Programming and scheduling

Our team can deliver reports addressing complex training system investigation questions. We are experts at complex data collection activities that produce statistical analysis and digital dashboard products.

These products allow clients to clearly understand and visualise their training system or pipeline in new ways, leading to more accurate decision making and targeted resource investment.

Coherics is working with the Australian university sector to further develop artificially intelligent training systems. This technology allows Coherics, in partnership with our clients, to generate individually tailored training that increases student engagement and learning, streamlines instructional burden and resource drain, and improves system wide evaluation.



Since 2019, Coherics has helped clients meet and exceed their desired outcomes. These are just some of the clients we have supported.

Clients we have worked with

Australian Army
 Australian Government Capability Acquisition and Sustainment Group
 Australian Government Defence Science & Technology Group
 Deakin University – Applied Artificial Intelligence Institute
 Downer Group
 Jet Aviation
 KBR (Kellogg Brown & Root)
 Lockheed Martin Australia
 Royal Australian Air Force
 Raytheon Australia Capability Plus Program
 SiNAB



Our partners and memberships

Australian Cyber Collaboration Centre (A3C)
 Business SA
 Defence Industry Security Program (DISP)
 Defence Teaming Centre
 Raytheon Australia



Projects

Coherics has and continues to work on a range of complex projects. Coherics is currently supporting, amongst a plethora of work packages, the following major projects:

- 1) ADF AIR5428 Phase 1 and Phase 2 Pilot Training System Project

- 2) Developing training materials for the PC-21 student and instructor cohort

- 3) Developed courseware including mass briefing packages and instructional guides

- 4) Designed adaptive training LMPs

- 5) Delivering expert training to the students of Number 1 Flying Training School

- 6) Evaluation and Analysis for the Throughout Demonstration Assessment Activity, aiding with program transition from Acquisition to Services

- 7) Development of a training database for PTS analysis and system configuration and control purposes

- 8) DSTG Research Project – delivering SME support for future training and simulation research, including LVC integration and its associated challenges



Projects

Coherics has also delivered successful outcomes on the following projects:

1) ADF Land Support Division, Integrated Soldier Systems Branch, High Altitude Parachute Operation Project – delivering job task analysis and Performance Needs Analysis on new Army equipment and training requirements including gap analysis

2) ADF LAND2097 Phase 4 Special Operations Rotary Wing Capability – delivering SME Tender Response requirements

3) ADF AIR6000 RAAF New Air Combat Capability – F-35 Joint Strike Fighter project – human factors engineering support

4) Deakin University's Applied Artificial Intelligence Institute (A2I2) – delivering training on contextualised AI research and development and LMPs





We have been involved in collaborative research with Coherics since its inception and have been impressed with their emphasis on innovation. Their willingness to go beyond traditional methods and look for new approaches is to be applauded. In particular, their support to our Higher Degree Research students has been significant, helping to ensure their research is well grounded with relevance in the real world.

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