DEFENCE GEOINT 2030
A STRATEGY FOR DEFENCE'S GEOINT CAPABILITY

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The Defence Indigenous artwork displayed in this strategy was thoughtfully created by Kalkadoon woman and contemporary Indigenous artist Ms Chern'ee Sutton for Defence in 2017.

The artwork is titled 'Caina Putut, Ilya, Wartanganha', which means 'Long Ago, Today, Tomorrow' in Kalkadoon language. It is a tribute to Aboriginal and Torres Strait Islander peoples who have served, and continue to serve, in the Australian Defence Force and Defence's Australian Public Service workforce.

You can find out more about the artist via www.cherneesutton.com.au.

The full meaning of this artwork is provided on the inside back cover of this strategy.

The artwork should not be reproduced without permission.

Enquiries about the artwork, its use and Defence Indigenous Affairs more broadly can be directed to indigenous.affairs@defence.gov.au.

Acknowledgement of Country

Defence acknowledges the Traditional Custodians of the lands, air, and seas in which we live, work, and train. We pay our respects to their Elders past, present, and emerging.

We also pay our respects to the Aboriginal and Torres Strait Islander men and women who have contributed to the defence of Australia in times of peace and war.
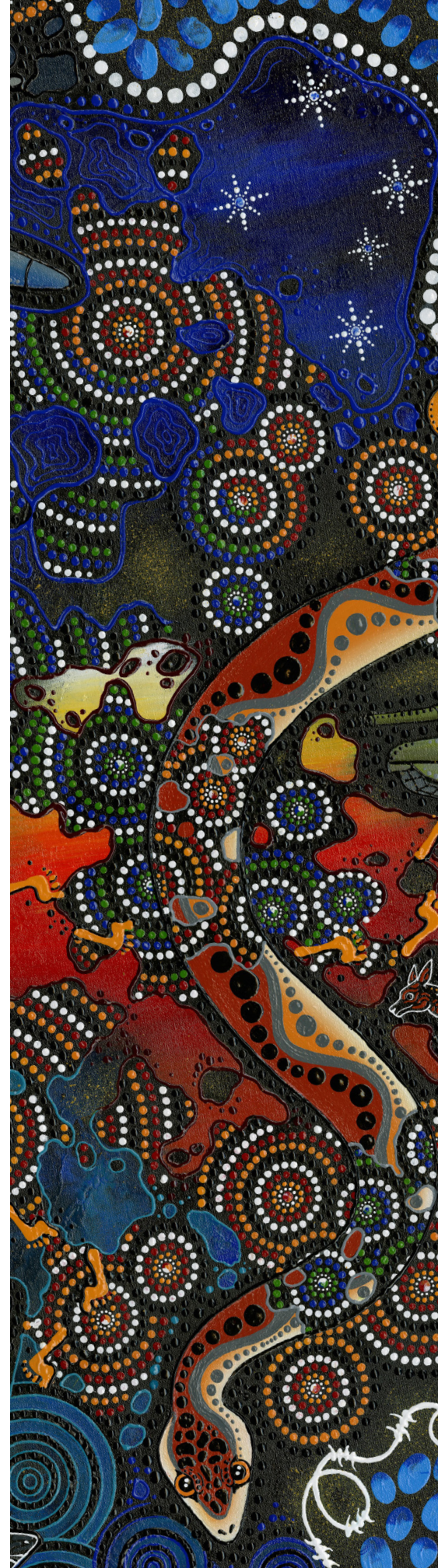
DEFENCE GEOINT 2030

A STRATEGY FOR DEFENCE'S GEOINT CAPABILITY

Foreword

Australia's strategic environment is changing. The geospatial sector is in the midst of rapid technological change. And GEOINT is a critical enabler for ADF operations. This is the context in which Defence GEOINT 2030 articulates Defence's vision and strategy to develop, deliver, and integrate GEOINT capabilities that meet the needs of the future force.

This document builds on the Defence Geospatial Strategy 2010, which set out a plan for delivering an enhanced geospatial capability for Defence by taking a more integrated and coordinated approach. The Defence GEOINT Community must evolve further along this path, and transform into an integrated and future-focused capability to meet the challenges of 2030 and beyond.

Integration will be key. The Australian Government has committed to significant investment in GEOINT capability projects through the Integrated Investment Program. To maximise the effect and value of this investment, as the demand for GEOINT increases, the Defence GEOINT Community will need to ensure that the full spectrum of data, information, intelligence, and services that comprise GEOINT are fully integrated and service-enabled.

The challenges that will emerge in Australia's national security environment—as well as the unprecedented acceleration of technological change—require the Defence GEOINT Community to reinvigorate its focus on the future. Solving hard problems will require multi-disciplinary, collaborative, and creative approaches from across traditional organisational boundaries. Our success will depend on building and continually developing the Defence GEOINT workforce across the APS and the ADF. Our strong international and industry partnerships will need to develop even further in support of this effort.

Our shared challenges are great, but we also have a real opportunity for the Defence GEOINT Community to strengthen its contribution to achieving Defence's mission. This strategy has been developed through a process of extensive consultation across Defence and outlines how the Community can achieve this aim. Implementation will require discipline, vision, and hard work and I am confident that across the Defence GEOINT Community we share a commitment to the work ahead.

Scott Dewar
Director, Australian Geospatial-Intelligence Organisation
Chair, Defence Geospatial Enterprise Board

GEOINT Conceptualised

The term 'geospatial intelligence' (GEOINT) means the collection, analysis, and dissemination of imagery and geospatial information to describe, assess, and visually depict physical features and geographically referenced activities in the air, land, maritime, and space domains.

To succeed in delivering its mission, Defence must take an integrated approach to the delivery and development of GEOINT, and the people, organisations, data, technology, and systems that underpin GEOINT capability. GEOINT covers a spectrum of geospatial information and intelligence activities, including, but not limited to:

- Activities and events
- Aeronautical
- Bathymetric
- Elevation
- Geodesy

- Human Geography
- Hydrographic
- Imagery
- Intelligence Mission Data
- Maritime

- Meteorologic
- Names and Boundaries
- Targeting
- Topographic

GEOINT enables Defence to succeed in the delivery of a broad and diverse range of functions, including: safety of navigation in the air and maritime domains; kinetic targeting; operational planning; conduct of missions and operations; situational and environmental awareness; intelligence assessments; business, estate, and infrastructure management; and strategic policy making.

To enable these functions, Defence will integrate the full suite of data, activities, and technical advice that fall within the broad spectrum of GEOINT. A fully integrated approach will ensure the optimal combination of GEOINT is delivered when and where it is required.

GEOINT Principles

Effective GEOINT is guided by enduring principles. It must be:

Timely and delivered at the speed required by decision-makers

Reliable for quality, accuracy, and currency

Useful and relevant to Defence requirements

Supported and enhanced by a collaborative community of professional GEOINT practitioners

Technical; drawing on a broad range of specialised skills and knowledge across professional disciplines and organisational boundaries

Enabling interoperability of the Joint Force

Discoverable and accessible

The Defence GEOINT Community

The Defence GEOINT Community includes all of the Services and Groups that contribute to the collection, analysis, and dissemination of GEOINT in support of the Defence mission, or are involved in developing and sustaining GEOINT capabilities.

The Defence Geospatial Enterprise Board (DGEB) is the senior consultative and advisory body for the Defence GEOINT Community. The DGEB provides strategic level oversight, governance, direction, and coordination of the Defence GEOINT Community. It is a forum for key stakeholders to assess the performance and health of Defence's GEOINT capability, and of the Defence GEOINT Community.

The Australian Geospatial-Intelligence Organisation (AGO) provides strategic leadership to address current and emerging GEOINT issues through a coordinated and integrated Defence GEOINT Community.

Additionally, GEOINT is noted as a Multi-Domain Program (MDP) in the Defence Capability Life Cycle Manual. This reinforces the collaborative approach the Defence GEOINT Community must take to deliver a Joint capability outcome.

Mission

To assure and deliver GEOINT capability for the defence of Australia and its national interests.

The Defence GEOINT Community develops, delivers, and sustains a trusted and protected GEOINT capability that underpins Defence's ability to achieve its mission: Defending Australia and its national interests. GEOINT delivers superior situational understanding and supports the integration of combat and support systems in Defence.

Vision

Transforming Defence GEOINT into an integrated and future-focused capability.

To deliver this vision, Defence will transform the way it collects, analyses, and disseminates GEOINT. The delivery of a trusted GEOINT capability comprising foundation and operational data on each mission network is fundamental to decision-making processes for Defence and its closest partners. More effective coordination and integration of Defence GEOINT capability—and the further development of a thriving professional community—will ensure that GEOINT delivered on behalf of Defence is of the quality and at the pace required to deliver decision advantage at all levels.

Over the next decade, Australia must be able to rapidly respond to an increasingly complex national security environment. GEOINT will be an important enabler of a highly networked, integrated, and adaptive Australian Defence Force (ADF) operating advanced platforms and systems. To achieve its mission, the Defence GEOINT Community will strengthen its focus on meeting future challenges and opportunities to ensure decision-makers maintain strategic, operational, and tactical advantage.

By 2030, Defence GEOINT capability will be integrated across all fixed and deployed networks to ensure Defence capabilities and personnel have timely access to authoritative and reliable GEOINT at strategic and tactical points of need. This capability will be developed in partnership with industry and academia to be future-focused, and will identify, adapt, and adopt new and emerging technologies. It will be enabled through a cohesive and active Defence GEOINT Community that is integrated with Defence Intelligence, Surveillance, and Reconnaissance (ISR) capabilities, and supported through appropriate governance, resources, and training.

Future Operating Environment

Requirements of a future force

GEOINT capabilities will need to be developed and adapted to meet the demands of an evolving, networked, and integrated ADF joint force. GEOINT will increasingly enable the ADF to defeat adversaries in and across Maritime, Land, Air, Space, and Information and Cyber domains. There will be an increased need for integrated GEOINT that allows Australia and its closest partners to always be able to 'fight off the same map', especially as the ADF method of warfighting relies on more agile command and control, and a pan-domain approach.

Increasing demand for GEOINT

Demand for GEOINT already exceeds Defence's capacity to deliver, and continues to grow. In Defence, GEOINT is delivered to meet a broad range of military and national functions. The range of complex national and global challenges that will require GEOINT support—and the demand for more rapid dissemination of high fidelity data—will continue to challenge Defence's ability to provide GEOINT in the timeframes and volumes necessary.

GEOINT must be disseminated in a manner that enables Defence to undertake a broad range of activities in support of its strategic objectives and in accordance with Defence Planning Guidance. The future ADF will conduct operations to shape our strategic environment and deter and respond to threats to Australia, and will also effectively contribute to international coalitions that support our regional interests.

The ADF will need flexible GEOINT capabilities that can respond to the range of global scenarios that will be encountered in the future. GEOINT will need to fully enable fifth generation combat and support systems and enable interoperability with coalition partners. The Defence GEOINT Community's operating and prioritisation models will need significantly more agility and guidance to meet these challenges.

Increased pace of technological change and greater access to data

The pace of technological change is unprecedented and accelerating. Disruptive technologies and approaches—such as automated computer vision processing, the application of artificial intelligence, and big data sensemaking—have the potential to drive the development of cutting-edge GEOINT.

New and enhanced capabilities will continue to be developed that will contribute to Defence accessing global, persistent GEOINT coverage. A greater volume and fidelity of data brings the risk that Defence will be overwhelmed and unable to fully exploit the available data. Defence will need to deliver insights from these larger volumes of data at a pace that enables decision makers to maintain advantage over adversaries. The way Defence integrates, processes, and exploits this data will require significant transformation to ensure its full value is realised.

Security and resilience

The growing importance of GEOINT to modern warfighting increases the potential for adversaries to view GEOINT collection and dissemination capabilities as a valuable target. Adversaries may seek to deceive, degrade, disable, or destroy GEOINT capabilities, challenging Defence's ability to develop and deliver a fully assured, end-to-end GEOINT capability. Effective cyber security and development of robust and resilient networked systems architectures will be critical to securing the GEOINT capability delivered for the future force.

Strategic Goals

Strategic Goal 1: Deliver trusted, assured, and secure GEOINT

By 2030, Defence will operate from common and trusted GEOINT data that provides every platform, system, and individual with an up-to-date, assured understanding of the physical environment and events within their area of operation. Defence's GEOINT capability and services will be secure and reliable, enabling a highly networked and integrated future force. GEOINT will be delivered seamlessly across multiple security classifications and ICT systems.

The operating model for GEOINT will shift to become increasingly data- and service-centric, allowing different parts of Defence and external customers to simultaneously be both users and producers of common data and services. Interoperability will be enabled through a comprehensive standards baseline, joint doctrine, collective training, and an authoritative GEOINT architecture developed as part of the Defence Single Information Environment.

The GEOINT Standards Office will enable the adoption of GEOINT standards through the maintenance of authoritative, configuration-managed GEOINT Standards Interoperability Baselines, and will lead the development of a GEOINT standards compliance regime. Informed by the Defence GEOINT architecture, the baselines will be representative of GEOINT ecosystems and will synchronise GEOINT consumers with GEOINT producers. Data, services, and analytical tools will be used by a variety of end users both within and beyond Defence. GEOINT capabilities will have the flexibility to support and enable a broad range of missions, including supporting economic, estate, environment, and management decision-making. Through enhanced engagement and training, end users will have a comprehensive understanding of how to utilise and include GEOINT in everyday decision-making processes.

Defence will develop national and international partnerships to ensure accessibility to the best available data. Where Defence has a low appetite for risk, the Defence GEOINT Community will diversify its access to GEOINT data and services to optimise coverage and resilience to support decision-making. Fielding a sovereign space-based GEOINT capability will increase the resilience of Defence's collection capabilities.

The Defence GEOINT capability will be developed in a way that is cognisant of the risks and threats posed by adversaries to the delivery of an end-to-end capability.

Strategic Goal 2: Drive continuous GEOINT innovation

By 2030, Defence will have a world-class GEOINT capability that can rapidly adapt to meet the needs of the future ADF, and provide trustworthy and authoritative GEOINT at the speed required for decision superiority.

Defence will evolve capability acquisition, science and technology, and innovation processes that increase the rate of adoption of automation, artificial intelligence, and computer vision technologies. It will also enhance human-machine collaboration. This will reduce reliance on manual processes, provide for the evolution of advanced tradecraft that allows analysts to develop specialised insights, and speed the dissemination of GEOINT to end users.

Experts in the fields of data analysis, data science, and data engineering will be brought together with GEOINT professionals to develop tradecraft and to exploit the sources available to Defence to discover new insights. Coordination of research and development will be a high priority for the Defence GEOINT Community. Innovation will be enabled by more effective engagement with existing Defence innovation platforms and partner capabilities, particularly with industry and academia.

Strategic Goal 3: Raise, train, and sustain an expert GEOINT workforce

By 2030, Defence will have a highly skilled and trained GEOINT workforce that operates across the Defence enterprise and consists of servicemen and women, and Australian Public Service and contractor personnel. The Defence GEOINT workforce will be recognised for its skill, expertise, and professionalism.

The employment market will remain competitive for the skills needed to develop, deliver, and sustain cutting-edge GEOINT capability, including for engineering, data science, data analysis, and data management. The Defence GEOINT Community will collaborate to forecast skills profiles for future GEOINT professionals, to identify potential risks and gaps across the Community, and to develop organisational strategic workforce plans.

The Defence GEOINT Community will invest significantly in career-long learning and development, and will enable its workforce to keep pace with—and maximise the opportunities presented by—changes in technology, tradecraft, and available data. The Defence GEOINT Community will operate as an interoperable workforce to meet future challenges. Enhanced community collaboration in the development and delivery of collective training in common GEOINT skillsets will increase workforce interoperability while still allowing for the development of deep subject matter expertise and specialisation within Groups and Services. Enhanced connectivity across organisational boundaries—supported by ICT systems and additional opportunities for collaboration—will enable more effective sharing of data, knowledge, and expertise.
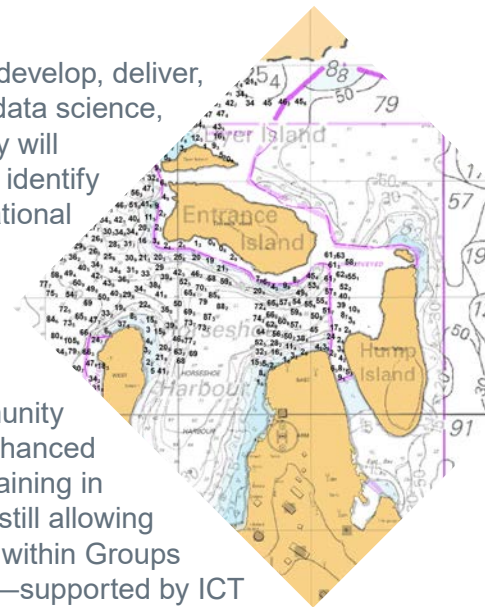
Strategic Goal 4: Deliver Defence GEOINT capability through stronger governance

By 2030, a well-governed Defence GEOINT Community will have a holistic appreciation of risks, issues, and dependencies between GEOINT and other Defence major capability projects, and will provide strategic and timely advice to Defence Capability Managers.

As a MDP within the Defence Capability Program Architecture, GEOINT will have a high level of Joint oversight and consultation to ensure relevant Programs harmonise across Domain boundaries to collectively deliver a defined Joint capability outcome. AGO will be a strong advocate for GEOINT within Defence, and will engage with capability developers to ensure that GEOINT capabilities are understood throughout the Capability Life Cycle. Closer engagement will ensure that GEOINT capabilities align with Defence's enterprise-level programs for information management and intelligence.

The Defence GEOINT Community will develop more flexible mission management and prioritisation frameworks that ensure outcomes align to Defence priorities and achieve integration and balance. This balance must acknowledge GEOINT in Defence works within a range of prioritisation frameworks for geospatial information, services, and intelligence, and component organisations have roles defined under differing legislation.

The management of strategic and enterprise risk will be critical to the governance of the Defence GEOINT Community. In line with the Defence Risk Management Framework, the Defence GEOINT Community will design risk management processes to ensure appropriate management and oversight of risk. The DGEB will be supported to make evidence-based assessments of risk through robust performance reporting.

Strategic Goal 5: Strengthen GEOINT partnerships

By 2030, Defence will operate within a well-balanced ecosystem of GEOINT partnerships that allows it to draw on the best available data, technology, and expertise to deliver leading-edge GEOINT capability. Defence will strengthen internal relationships to improve the use of GEOINT in Defence capabilities. Closer engagement with partners will be enabled through Defence's delivery of physical and ICT infrastructure that allows for data sharing and collaboration across multiple security classifications.

The Defence GEOINT Community will undertake a more coordinated approach to developing purposeful, structured, and outcome-orientated partnerships with industry and academia. Enhanced use of existing Defence industry and innovation programs will ensure Defence GEOINT Community requirements are well understood. Increased transparency will support the development and exploitation of leading-edge GEOINT technology, data, and tradecraft to enable the Defence mission.

Defence will strengthen partnerships with Australian Government GEOINT data and service agencies. The Defence GEOINT Community will support the National Intelligence Community to further develop its understanding and use of GEOINT, including through increased sharing of data, knowledge, and expertise.

Australia's alliance partnerships and engagement in multilateral forums will remain critical to the development of Defence GEOINT capability. Close cooperation with US partners will remain fundamental to our ability to deliver Defence GEOINT. The Defence GEOINT Community will continue to nurture relationships with international partners and strengthen contributions to these partnerships. Defence will continue to broaden its GEOINT engagement, especially in the near region, in support of Defence's strategic interests.

Next Steps

An implementation framework, action plan, and capability roadmap will be developed by the Defence GEOINT Community in a coordinated and collaborative way to support the implementation of this Strategy across the whole of Defence.

Implementation of Defence GEOINT 2030 will be steered by the DGEB, and will be supported by the establishment of working groups in 2020.

Due to the pace and scale of change in Australia's national security and technology landscapes, it is anticipated that Defence GEOINT 2030 will be reviewed by 2025.

Acknowledgements

Throughout 2019, AGO consulted with personnel across numerous locations within the Defence GEOINT Community and those who depend on the Community regarding the direction Defence GEOINT should take to 2030.

The enthusiasm, passion, and commitment to GEOINT of those professionals who participated in the consultation sessions, together with the collaborative effort of the DGEB members, has resulted in Defence GEOINT 2030.

DGEB members are listed below

- Australian Geospatial-Intelligence Organisation
- Headquarters Joint Operations Command
- Land Capability Division, Army Headquarters
- Navy Capability Division, Royal Australian Navy
- Deputy Chief Air Force Division, Air Force Headquarters
- Force Design Division, Vice Chief of the Defence Force Group
- Force Integration Division, Vice Chief of the Defence Force Group
- Information Warfare Division, Joint Capabilities Group
- ICT Delivery Division, Chief Information Officer Group
- Joint Systems Division, Capability Acquisition and Sustainment Group
- Estate and Infrastructure Group
- Corporate and Capability Division, Australian Signals Directorate
- Intelligence, Surveillance and Space Division, Defence Science and Technology Group
- Geoscience Australia
- Bureau of Meteorology

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Strategic Goals

1. Deliver trusted, assured, and secure GEOINT
2. Drive continuous GEOINT innovation
3. Raise, train, and sustain an expert GEOINT workforce
4. Deliver Defence GEOINT capability through stronger governance
5. Strengthen GEOINT partnerships

CAINA PUTUT, ILYA, WARTANGANHA

The artwork used in this document was created for Defence by Ms Chern'ee Sutton, a contemporary Indigenous artist from the Kalkadoon people from the Mount Isa area of Queensland. Chern'ee's description of the artwork is provided below.

The rainbow serpent represents the dreamtime and the beginning of the longest living culture in the world and it also represents the longest continuous belief in the world which is the rainbow serpent.

The reds and oranges in the middle of the painting represents our sunburnt country and Uluru, the birth place and creation of all life in Australia.

The red, yellow, and black circles represent Aboriginal peoples and the blue, green, and white circles represent Torres Strait Islander peoples, all of whom have a strong connection to their culture, their history, the land, air, and sea.

The Southern Cross unites all Australians as one and it reminds us of our past with our ancestors for the past 60,000 years, passing down creation stories from generation to generation while gazing at the star systems that have remained ageless since the dawn of time.

The large community symbol represents the Australian Public Service who encourage Aboriginal and Torres Strait Islander peoples to enlist and serve in the Navy, Army, and Air Force, with the yellow footprints representing their enlistment journey to the Australian Defence Force.

The Navy is represented by the Guided Missile Frigate and the shark who relentlessly patrols the waters, always ready to strike. The Army is represented by the M1 Abrams tank and the kangaroo whose speed and agility is always moving forward. The Air Force is represented by the F/A-18 Hornet and the eagle who soars high above keeping a watchful eye out for their prey.

The smaller community symbols joined by the white dotted lines represent the Australian Defence Force which is all connected as one to the land, the sea, and the skies.

The blue fingerprints around the outside of the painting represent the Armed Forces that protect our borders, our citizens, and our way of life.