Joint Architecture for Forward Denial

Surveillance and long-range strike for Australia's northern approaches

MALCOLM EDGAR · NOVEMBER 2026 · BRIEF · VERSION 1.3

Australia's strategy of denial requires capabilities that can enter service before the AUKUS class submarines arrive from the 2040s. This brief proposes an Australian-controlled surveillance and targeting network paired with long-range fires, with initial fielding in the early 2030s and the proposed baseline in place by 2035. It sets out the capability, its estimated acquisition cost and its relationship to existing Defence investment programs.

What Forward Denial requires and how the Joint Architecture meets it

FIND AND HOLD

1 · Custody of the approaches

The Joint Sovereign Targeting Network (JSTN) is a persistent, theatre-wide surveillance, reconnaissance and targeting network, optimised for maritime operations. Australian-owned SAR and RF/ELINT/comms constellations, linked through the JSTN core, find, classify and maintain targeting-grade custody of surface forces across the approaches. It exchanges tracks and cues with the wider Defence Targeting Enterprise; its ELINT also contributes airborne-emitter data to the air picture.

DESTROY AT RANGE

2 · Credible destruction at standoff

Australian geography sets the reach: denying a projecting force any safe standoff from the assets it threatens requires fires of roughly 2,400 km. The Long-Range Precision Fires (LRPF) batteries provide that reach with 3,600 Australian-built anti-ship rounds, most of them emplaced forward on Defence sites in peacetime. **In the technical companion's modelling, one battery destroys a small surface action group, two destroy a larger group and three mission-kill a carrier strike group.**

DETER VISIBLY

3 · Demonstrating the capability

Deterrence operates in peacetime and in crisis, so an adversary needs to be able to see the capability. The batteries can be counted, the production line visited, the coverage published and exercises observed. In a crisis, readiness can be raised in visible stages before any weapon is fired.

SOVEREIGN IN CRISIS

4 · Resilience under Australian authority

Built and sustained from supply chains Australia can rely on under stress, with Australian control of tasking, targeting, weapon release and the LRPF production line. Allied and commercial systems can augment the architecture without becoming a crisis dependency.

Scale, schedule and unit costs

2035

proposed date for the full baseline, **inside the threat window**; fielding begins in the early 2030s.

3,600

rounds in 25 batteries (15 emplaced forward, 10 road-mobile in reserve), held on Australian territory in peacetime, with most of the rounds already at forward sites.

US$43M

one battery of 144 rounds. In the companion's modelling it destroys a small surface action group worth billions of dollars; three batteries (~US$130M) mission-kill a carrier strike group.

US$300k

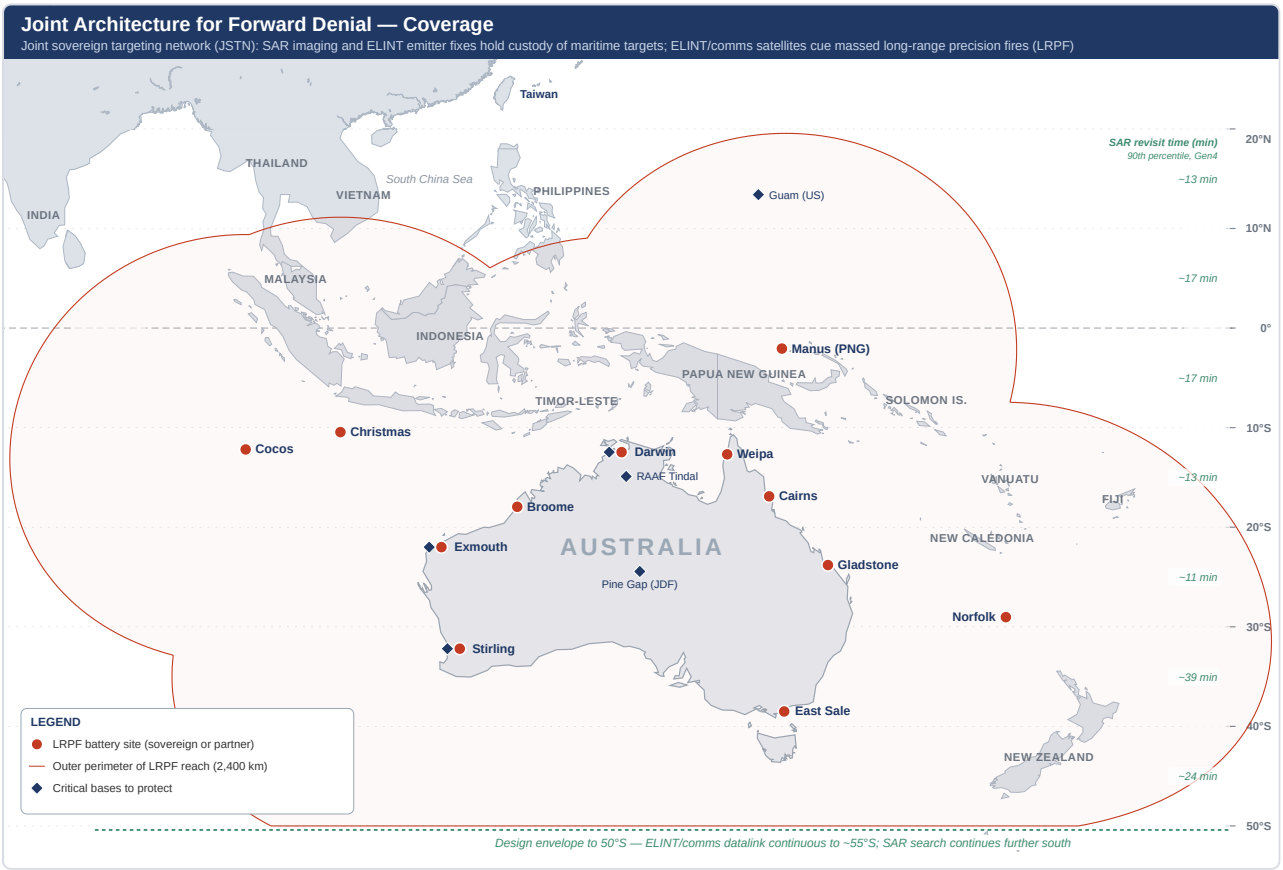
Target unit cost (build-to-cost). 2,400 km reach; 250 kg warhead. Affordable-mass programs support a low-hundreds-of-thousands cost class, but the Long-Range Strike Missile (LRSM) is larger and longer-ranged than these.

The network — persistent custody of the approaches

How the network sees. JSTN combines two Australian-owned satellite shells with existing Defence sensors. Synthetic-aperture radar detects and images ships in all weather, day and night, and provides high-resolution reconnaissance of fixed sites. The ELINT/comms shell detects, classifies and geolocates surface and airborne emitters, which helps maintain maritime tracks between radar looks while ships are emitting. JORN remains outside JSTN but provides wide-area cueing. The network maintains custody of surface forces across the approaches, with minute-scale revisit in the equatorial priority area. It exchanges data with existing ADF sensing and battle-management systems; its airborne ELINT reports are one input to the wider air picture. The new elements are the two satellite shells and the JSTN core, the Australian-controlled ground element that fuses maritime data, manages LRPF engagements and enables collaborative joint service engagements via Link 16. The JSTN as a whole is a component of the Defence Targeting Enterprise.

Custody under Australian control. Commercial and allied data can augment awareness, but assured fire-control custody requires Australian control of tasking, timeliness and release. The February 2025 PLAN deployment into the Tasman Sea illustrated the standing-custody problem: first notice of the live-fire exercise came from a commercial airline pilot, and maintaining track of three ships required a national surge of ships and aircraft. JSTN is intended to provide that custody as a standing function. Its components have already been demonstrated: national SAR systems have been delivered within a year of contract, Link 16 has been broadcast from low earth orbit, and Ukraine's long-range strikes rely on commercial imagery and machine-vision seekers. JSTN would integrate them at theatre scale.

Shared tracks and datalinks. The ELINT/comms shell carries two datalinks. First, an L-band LRPF weapon datalink provides mid-course updates as targets manoeuvre between launch and arrival. Second, an L-band Link 16 broadcast distributes a joint maritime targeting picture to crewed platforms and shooters. Because the network maintains the track, the RAAF can keep surveillance aircraft outside a task group's air-defence envelope while still providing shooters with a continuous targeting picture. AUKUS Pillar 2 hypersonic weapons could use the same beyond-horizon targeting data, allowing air- and land-launched weapons to be coordinated. The network can also provide maritime cueing to nuclear submarines when they enter service.



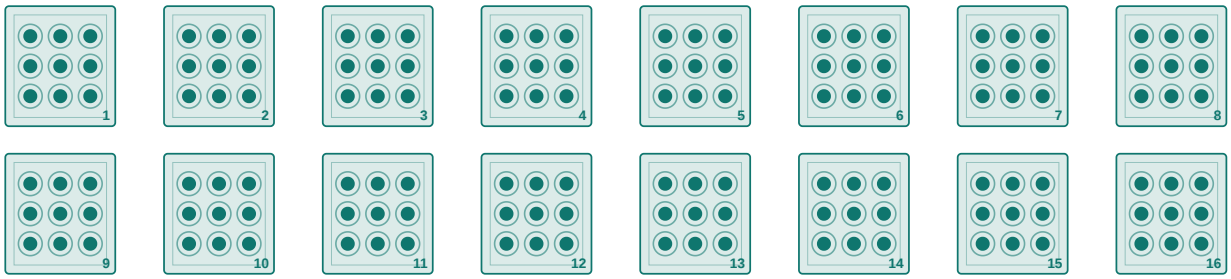
JSTN surveillance and custody (SAR revisit by latitude, 90th percentile) and 2,400 km fires coverage of the approaches, for comparison with the threat map in the companion brief. Battery sites illustrative; the force distributes 15 emplaced batteries across five sectors, with 10 road-mobile batteries held in reserve.

The Long-Range Precision Fires battery

Affordable-mass programs have changed the economics of long-range strike: cruise-missile-class weapons can now be designed for high-rate production at a cost low enough to be fired in large salvos. The proposed LRSM combines a 2,400 km reach with a 250 kg warhead and passive terminal guidance, with a build-to-cost target of about US$300,000 per round.

LRPF battery = 16 containers = 144 rounds · ~US$43M

Sixteen identical 40-foot high-cube containers. Each holds nine rounds, three across by three high.



16 containers · 9 rounds each · 144 rounds

THE ROUND

Reach	2,400 km
Length	6.75 m including booster
Body diameter	0.58 m
All-up mass	~1,650 kg, including ~800 kg of fuel
Propulsion	turbojet, additively manufactured
Profile	subsonic cruise; terminal sea-skim, ~5 m in a calm sea
Warhead	250 kg blast-fragmentation, point, delayed fuze or air burst
Navigation	GNSS and inertial, JSTN mid-course update
Terminal guidance	passive machine-vision seeker; anti-radiation variant (SEAD)
Unit cost	~US$300,000
Per container	9 rounds, three across by three high
Container gross mass	~25 t against an ISO limit of 30.5 t

Anti-ship · land strike · suppression of air defences · anti-materiel

WHAT A BATTERY DOES

1	1 battery	**Small surface action group** cruiser, frigate, oiler **126 rounds to destroy**
2	2 batteries	**Large surface action group** cruiser, destroyer, 2 frigates, oiler **230 rounds to destroy**
3	3 batteries	**Carrier group** carrier, cruiser, destroyer, 3 frigates, oiler **339 rounds to mission-kill**

THE FORCE

25 batteries · 400 containers · 3,600 rounds

~US$1.08 billion fly-away

15 emplaced across five sectors · 10 road-mobile in reserve

Engaging a defended group. Against a defended naval group, LRPF is intended to attack simultaneously from multiple bearings, forcing the defence to deal with many genuine threats within the same engagement window. The technical companion estimates that a 144-round battery is sufficient against a small surface action group, two batteries against a larger group and three against the modelled carrier group. In that model, with weapons this cheap, the defender's magazine depth and engagement capacity become the limiting factors.

Beyond maritime strike. The standard missile uses passive machine-vision guidance for ships and surveyed land targets, while an anti-radiation seeker variant can attack emitting air-defence radars. In a joint operation, massed LRPF could therefore contribute to suppressing or degrading air defences before crewed aircraft enter the defended area, while the JSTN provides targeting updates and coordinates fires from land, air and maritime platforms.

Force size and regeneration. Twenty-five batteries provide 3,600 rounds, with fifteen emplaced batteries distributed forward across five sectors and ten road-mobile batteries held in reserve in the south. A warm Australian production line is intended to replenish expenditure and, at surge rate, rebuild the standing inventory in about a year.

Survivability: dispersal, deception and mobility. The forward batteries are statically emplaced and remotely monitored on existing Defence sites, and each battery's sixteen launch containers sit among about 64 decoys that match them in appearance and thermal signature, so an attacker must treat every position as live. The ten reserve batteries are road-mobile: they fire from their trailers and can come forward to reconstitute or strengthen a sector. The balance between the two can be changed and need not be declared. The overall force is designed so that the loss of individual launch positions reduces available fires without disabling the wider capability.

Delivery schedule and funding

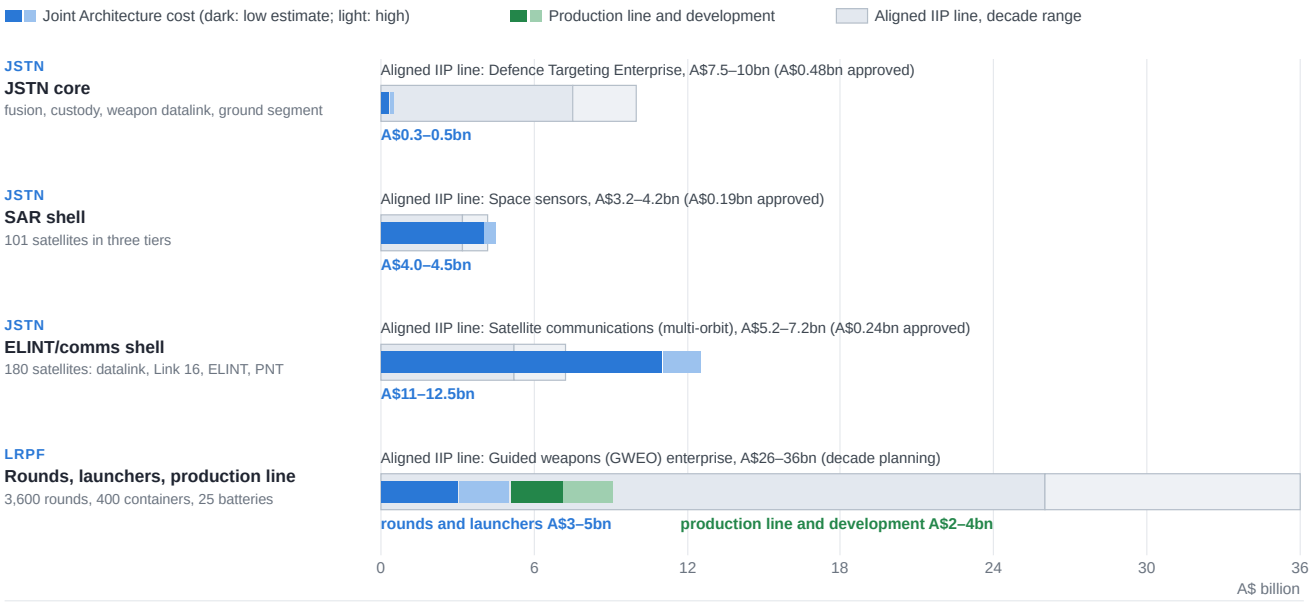
Proposed build order.

- **The JSTN first:** the batteries and other shooters depend on its targeting data.
- **The LRPF batteries in parallel:** with the network, they form the capability intended to deter in the mid-2030s.

Fielding would begin in the early 2030s, with the full baseline in place by 2035. The 2026 Integrated Investment Program names the relevant areas as priorities: the targeting enterprise, long-range strike and resilient multi-orbit space.

What the Joint Architecture costs, and the programs it aligns with

A$ billion, acquisition over the decade, against the 2026 Integrated Investment Program line each component aligns with.



The Joint Architecture in total: about A$20–26bn of acquisition over the decade

JSTN A$15.5–17.5bn and LRPF A$5–9bn, some 5 to 6 per cent of the A$425bn Program.
LRPF includes development, initial support and contingency; battery site works (A$10–30m a battery) sit in the northern-bases envelope.

The Joint Architecture costed by component, drawn to scale against the Integrated Investment Program line each aligns with. The JSTN core and the fires fall within the ranges of the Defence Targeting Enterprise and guided-weapons lines, subject to funding decisions within those programs. The two satellite shells exceed the space-sensors and satellite-communications lines by about A$4–9 bn, which would be additional funding. Figures: technical companion v1.3 (Section 2.9, Table 4.6) and IIP 2026.

Relationship to AUKUS

When the AUKUS class submarines enter service, the network would already hold custody of surface forces across the approaches and could provide them with maritime cueing. AUKUS Pillar 2 hypersonic weapons could use the same targeting data, and later hypersonic rounds could be fired from the same batteries. If the submarines are delayed, the batteries and network provide a denial capability in the meantime. If Taiwan's status changed (the scenario in the companion brief), the architecture would keep its bases, because it operates from Australian territory.

Three decisions

Specify the GWEO enterprise's long-range product: the 2,400 km round, built on an Australian line. Specify the Defence Targeting Enterprise and space-sensors lines to the JSTN core and the SAR shell. Carry the ELINT/comms shell through the multi-orbit satellite communications program and fund the balance of the space layer beyond those lines. In all, about A$20–26 bn of acquisition over the decade, including about A$4–9 bn of additional funding for the space layer.

The Joint Architecture would establish a persistent surveillance and targeting network across Australia's northern approaches, strengthening the forces already in service while adding a new long-range strike capability. It would enter service before the AUKUS submarines and remain an essential part of the joint force.

Sources: *The Changing Maritime Landscape* v1.3 (Nov 2026) · *Joint Architecture for Forward Denial* v2.0 (July 2026) · Technical companion v1.3 (Nov 2026) · full reference lists therein.