

Joint Architecture for Forward Denial

Completing the strategy of denial — the capability, in four pages

MALCOLM EDGAR · OCTOBER 2026 · BRIEF · VERSION 1.2

Australia's strategy is deterrence by denial of the northern approaches, in a window the Government's threat judgments set at the mid-2030s. The AUKUS class submarines arrive from the 2040s. This brief describes an additional capability that can be fielded inside that window: a persistent, theatre-wide surveillance, reconnaissance and targeting network paired with Australian-controlled long-range fires, integrated with the wider Defence targeting and battle-management environment and aligned with funding lines already on the books.

What Forward Denial requires — and what the Joint Architecture delivers

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 deliver it: 3,600 sovereign ship-killing rounds, forward on defence lands in peacetime. **One battery destroys a small surface action group; two destroy a large one; three mission-kill a carrier strike group.**

DETER VISIBLY

3 · Demonstrability before any shot

Deterrence operates in peacetime and crisis, so the capability must be visibly generated, exercised and communicable in graduated steps. Containerised batteries that can be counted, a production line that can be toured, coverage that can be published and an exercise record that can be watched are **a deterrent that can be shown** before any shot, which is where deterrence does its work.

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.

The arithmetic, in four numbers

2035

the full baseline stands **inside the threat window**; fielding begins in the early 2030s.

3,600

rounds in 25 batteries (20 forward, 5 reserve), deployed on Australian soil in peacetime: the magazine is already where the fight would be.

US\$43M

one battery of 144 rounds, which destroys a surface action group of hulls worth billions of dollars. Mission-kill a carrier strike group: three batteries, ~US\$130M.

US\$300k

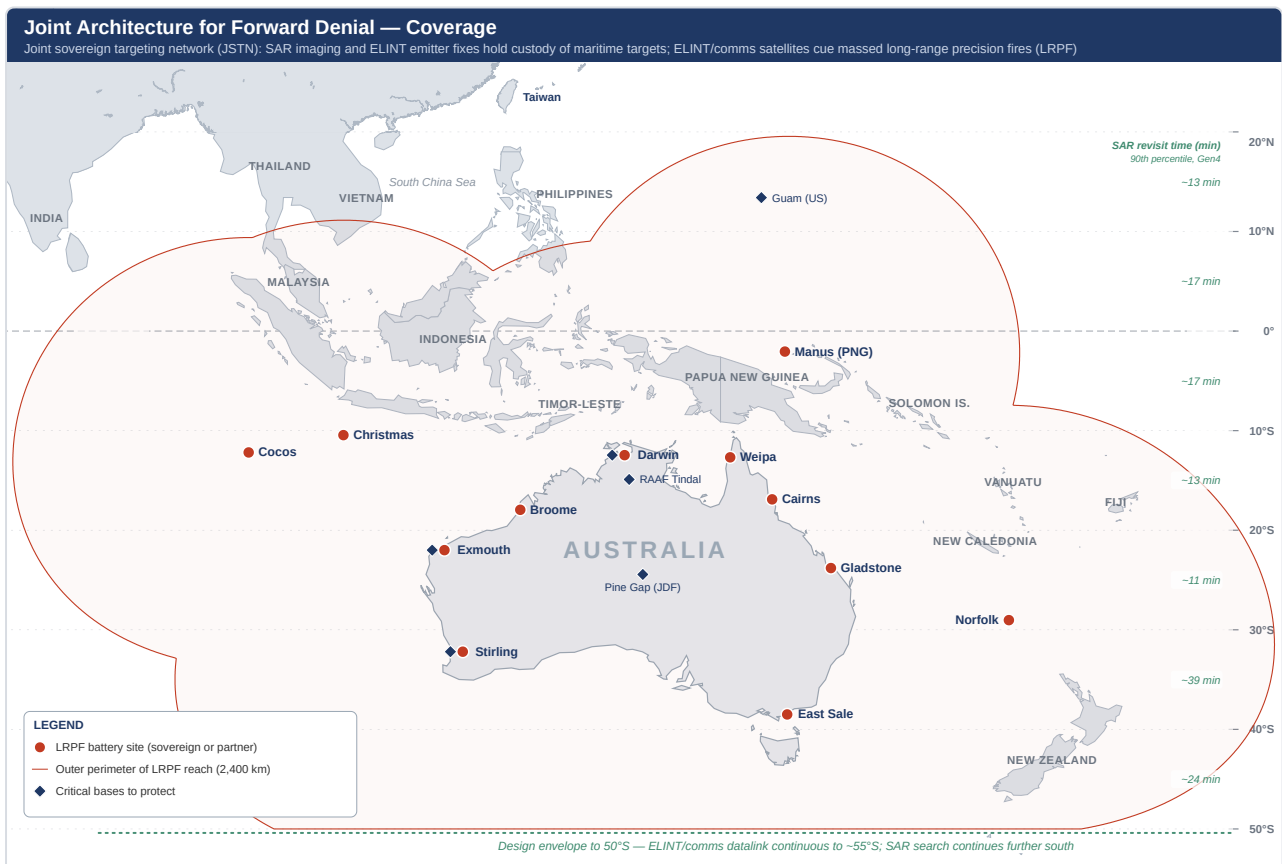
Build-to-cost planning target. 2,400 km reach; 250 kg warhead. Affordable-mass programs support a low-hundreds-of-thousands cost class, but the Long-Range Strike Missile (LRSM) is larger and longer-ranged than these.

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 contribute to the wider air picture rather than replacing it. 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. What JSTN adds is their integration 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.



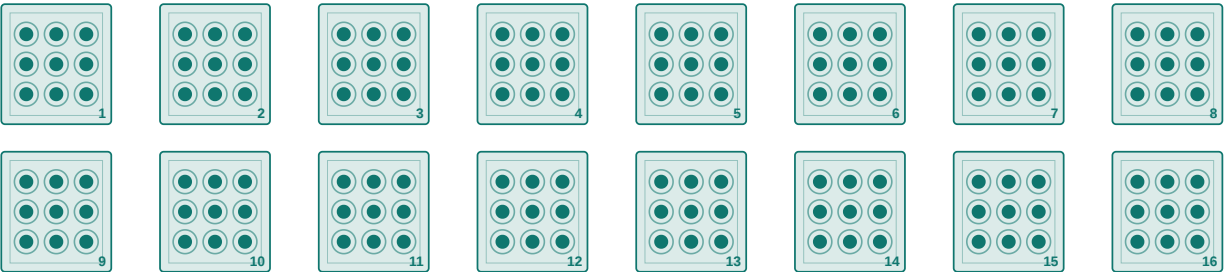
One frame, both halves of the capability: persistent JSTN surveillance and custody (SAR revisit by latitude, 90th percentile) and 2,400 km fires coverage of the approaches, the mirror image of the companion brief's threat map. Battery sites illustrative; the force distributes 20 batteries across five sectors, with 5 held in reserve.

The fires that kill — the Long-Range Precision Fires battery

Affordable mass has changed the economics of long-range strike. The Joint Architecture leverages this change: cruise-missile-class weapons can now be designed for high-rate production at a cost low enough to be used in large salvos rather than reserved for small numbers of high-value targets. 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, every one a ship-killer

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 battery	Small surface action group cruiser, frigate, oiler 126 rounds to destroy
	2 batteries	Large surface action group cruiser, destroyer, 2 frigates, oiler 230 rounds to destroy
	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 · 20 forward across five sectors, 5 in reserve

The operational effect comes from combining that reach with numbers. 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. These are modelling results, not combat outcomes, but they show that with cheap enough weapons the defender's magazine depth and engagement capacity become the limiting factors.

The same weapon family also extends the concept 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.

The force is sized around sustained use rather than a small exquisite inventory. Twenty-five batteries provide 3,600 rounds, with twenty batteries distributed forward across five sectors and five held in reserve. A warm Australian production line is intended to replenish expenditure and, at surge rate, rebuild the standing inventory in about a year. The deterrent effect therefore comes from the combination of range, magazine depth and the ability to regenerate the magazine.

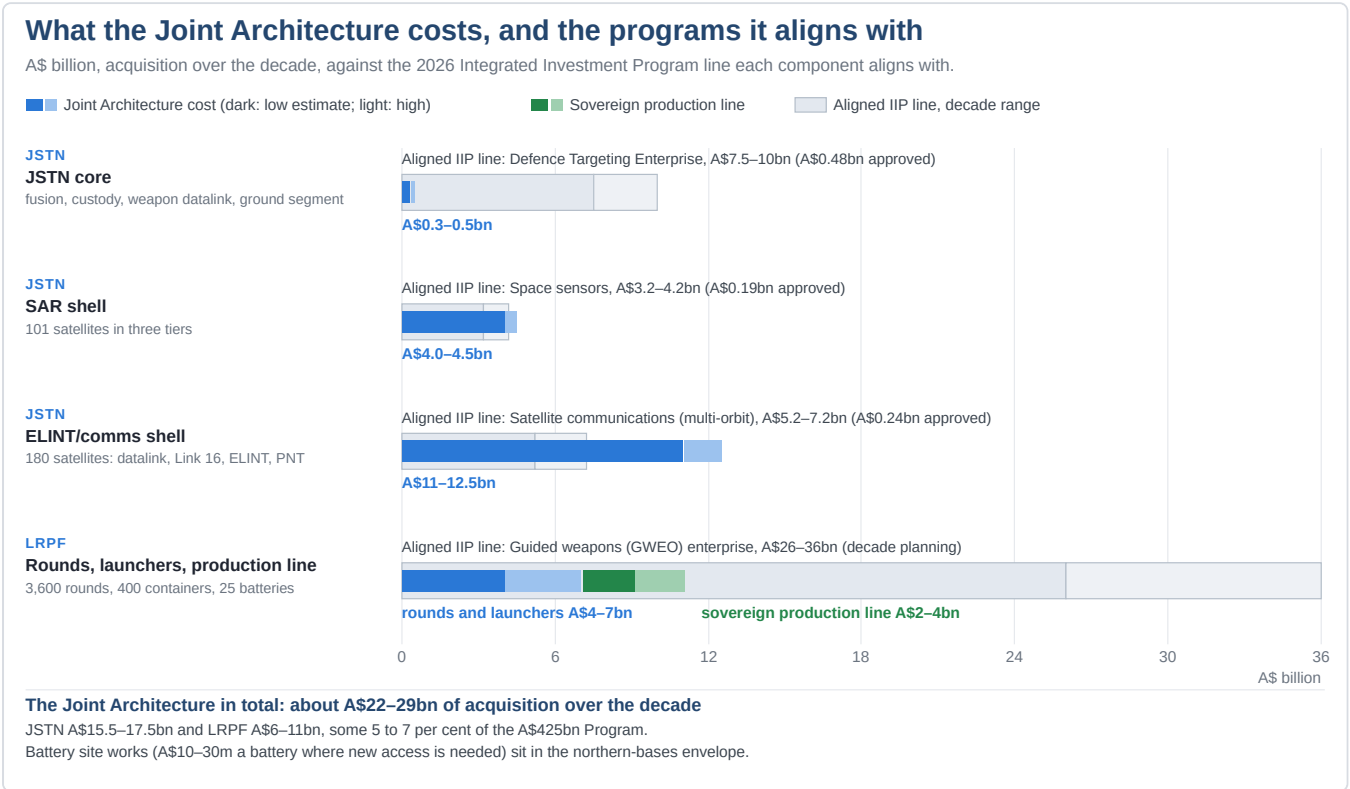
Survivability comes from dispersal across multiple Defence sites rather than concentration at a small number of fixed launch bases. The batteries are statically emplaced, remotely monitored and supported by existing Defence infrastructure. Each battery's sixteen launch containers sit among 32 to 64 decoy containers that match them in appearance and thermal signature, so an attacker must treat every position as live. The overall force is designed so that the loss of individual launch positions reduces available fires without disabling the wider capability.

Fielded inside the threat window, aligned with existing programs

The build order follows leverage and speed.

- **The JSTN first:** the most sovereign, highest-leverage element, logically prior to every shooter.
- **The LRPF batteries with it:** together with the network, the element that deters in the mid-2030s threat window.
- **Air and missile defence and base hardening** proceed as separate programs; the batteries rely on them for protection and add no cost to them.

Fielding begins in the early 2030s; the full baseline stands by 2035. These are the investments the 2026 Integrated Investment Program has already named as priorities of the strategy of denial: the targeting enterprise, long-range strike and resilient multi-orbit space.



The Joint Architecture costed by component, drawn to scale against the Integrated Investment Program line each aligns with. The JSTN core and the fires fit inside the Defence Targeting Enterprise and guided-weapons lines. The two satellite shells exceed the space-sensors and satellite-communications lines by about A\$4–9 bn: that balance is new money, carried because the constellations enable the whole architecture. Figures: technical companion v1.2 (Section 2.9, Table 4.6) and IIP 2026.

How it strengthens AUKUS

The submarines arrive into a theatre the network already watches and the fires already defend, cued by sovereign custody, based at a Stirling protected by Australian air defence. Pillar 2 becomes the supply line, feeding hypersonic generations through the Australian chassis. And it is robust to every future: boats on schedule are multiplied; late, the layer holds anyway; and if the region's geography shifts (the companion brief's Taiwan scenario), the joint architecture anchors to the one geography that cannot be taken.

Three decisions

Specify the GWEO enterprise's long-range product: the 2,400 km sovereign 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\$22–29 bn of acquisition over the decade, most of it inside lines that already exist.

The one-sentence case: the joint architecture can be fielded inside the threat window, survives being found, and is largely a specification of money already committed: the layer that holds the approaches until the AUKUS submarines arrive, and the network makes them count when they do.

Sources: The Changing Maritime Landscape v1.2 (Oct 2026) · Joint Architecture for Forward Denial v2.0 (July 2026) · Technical companion v1.2 (Oct 2026) · full reference lists therein.