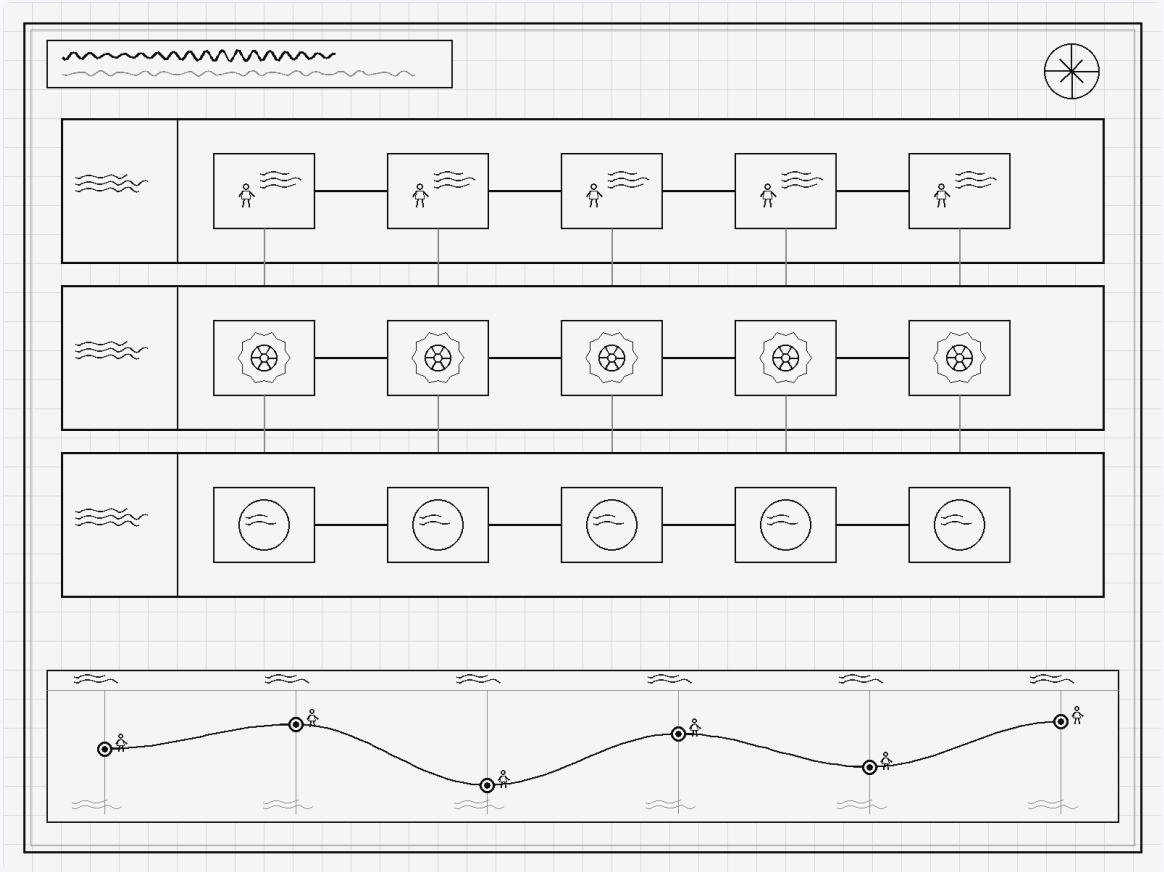
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Global Government Regulation: C-UAS, Drones (BVLOS/UTM), AVs & Transport AI

Solving the ACMA/CASA Jamming Ban via NSW Police Federation + NTC AVSL, UK AV Act 2024, EU AI Act Annex III, FAA Part 108 & China CAAC

09. Global Government Regulation: C-UAS, Drones (BVLOS/UTM), Autonomous Vehicles & Transport AI

Prepared for the Architect of Tech — Transport for NSW (TfNSW)



TfNSW + NSW Police Federated C-UAS Legal Architecture

1. The C-UAS Legal Paradox: Why TfNSW Cannot Legally Jam or Shoot Down Drones Alone (And How to Solve It)

1.1 Australia's Three Federal Statutory Barriers

Across Australia, the US, the UK, and the EU, state transport infrastructure owners face a strict legal prohibition against operating active C-UAS effectors:

- **ACMA & the *Radiocommunications Act 1992 (Cth)*:**
- Under **Sections 189, 190, and 191**, operating, possessing, or supplying a radiofrequency or GNSS jamming device—or causing deliberate interference to radiocommunications—is a federal felony punishable by **up to 5 years imprisonment** (`https://www.acma.gov.au/jammers-are-illegal`).
- State transport agencies (TfNSW, Sydney Trains, Sydney Metro, Port Authority of NSW) have **no statutory exemption** to own or trigger RF/GNSS jammers.

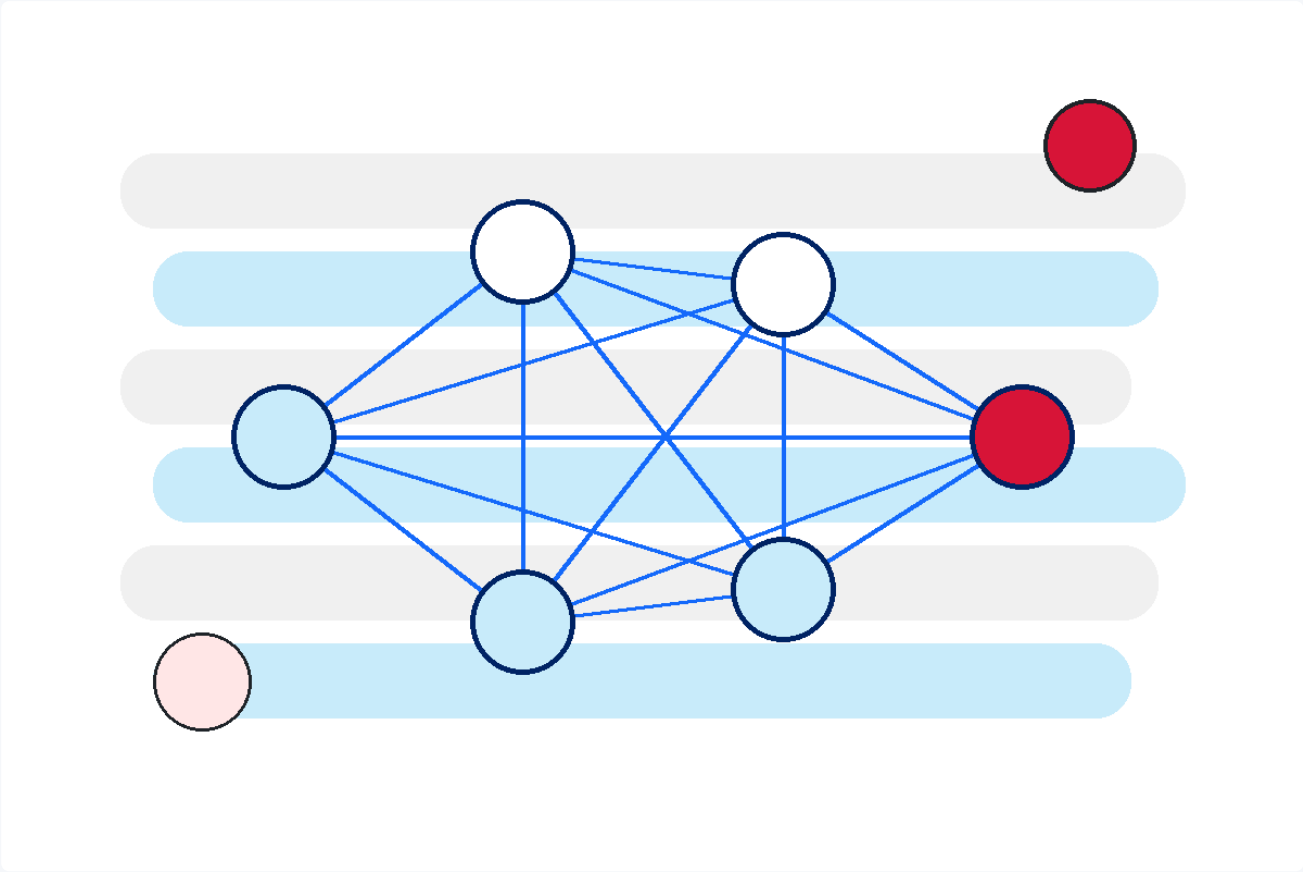
- **CASA, *Civil Aviation Act 1988 (Cth)* & *Crimes (Aviation) Act 1991 (Cth)*:**
- Under Commonwealth law, any drone (RPAS) in flight is legally classified as an **"aircraft."**
- Kinetically shooting down, netting, lasering, or destroying an aircraft in flight violates federal aviation sabotage laws (carrying penalties of **14 to 20 years imprisonment**).
- ***Telecommunications (Interception and Access) Act 1979 (Cth)* & *Criminal Code Act 1995 (Part 10.7)*:**
- Active **Cyber Protocol Takeover** systems that intercept payload streams or inject root commands into a drone's flight controller can trigger federal wiretapping and computer-offense laws unless operated by an exempt law enforcement agency.

1.2 The Statutory Solution: ACMA Section 27 & The NSW Police Force (NSWPF) Federated Kill-Chain

- **Who *Can* Legally Interdict Drones in NSW?**
- Under **Section 27** of the *Radiocommunications Act 1992*, the ACMA enacted the ***Radiocommunications (Exemption – Remotely Piloted Aircraft Disruption) Determination***, which grants statutory authority to possess and operate C-UAS disruption equipment **exclusively to the Australian Defence Force (ADF), Australian Federal Police (AFP), and State/Territory Police Forces (including the NSW Police Force)**.
- **The Architectural Blueprint for TfNSW:**
- **TfNSW Owns & Operates 100% Legal Passive DTI Sensors:** Passive RF spectrum sensors (**DroneShield DroneSentry / Dedrone**), Remote ID receivers, EO/IR optical cameras, and standard licensed micro-Doppler radars involve **zero jamming emissions** and are **100% legal for TfNSW to deploy today** on the Sydney Harbour Bridge, Circular Quay, and Sydney Metro viaducts.
- **Sub-Second API Federation with NSW Police Force Aviation Command:** When a rogue drone breaches a critical TfNSW geofence, TfNSW's C2 system automatically slews PTZ thermal/optical cameras onto the drone, triangulates the **rogue pilot's ground controller GPS coordinates** via RF Direction Finding, and pushes the live video feed + pilot GPS pin via low-latency API directly to **NSW Police Force** patrol units to arrest the pilot on the ground or activate authorized NSWPF **EnforceAir2 / DroneGun Mk4** mitigation!

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2. Global Regulatory Matrix: Drones (BVLOS/UTM), C-UAS, AVs & AI



Global Regulatory Comparison Matrix

2.1 Drone, BVLOS & UTM Airspace Regulation Around the World

- 🇦🇺 **Australia (CASA & Airservices Australia — `https://www.casa.gov.au/drones`):**
- Governed by **CASR Part 101**. Transitioning from slow case-by-case waivers to **AusSORA** (Australian Specific Operations Risk Assessment) and **Broad-Area BVLOS Self-Assessment** frameworks for trusted ReOC operators (enabling TfNSW to deploy automated Drone-in-a-Box stations along rail and road corridors).
- **FIMS (Flight Information Management System):** Built by **Airservices Australia** (with Frequentis) as the national digital backbone of Australia's **UTM (Uncrewed Traffic Management)** ecosystem (`https://www.airservicesaustralia.com/about-us/projects/fims/`). TfNSW should publish dynamic ground-risk layers (live train occupancy, motorway traffic density, emergency zones) from Digital Twin NSW directly into FIMS.
- 🇺🇸 **United States (FAA — `https://www.faa.gov/uas`):**

- *14 CFR Part 107* (small UAS), *Part 89* (mandatory **Remote ID**), **LAANC** automated low-altitude authorization, and the landmark upcoming **14 CFR Part 108 (Normalized BVLOS Rule)** mandated by the *FAA Reauthorization Act of 2024* to allow routine, waiver-free linear infrastructure inspection and package delivery, alongside **Innovate28** for eVTOL integration by the 2028 LA Olympics.
- *US C-UAS Law (6 U.S.C. § 124n):* Restricts active C-UAS mitigation to 4 federal departments (**DoD, DHS, DOJ, DoE**); state DOTs and airports are restricted to passive detection.
- 🇪🇺 **European Union (EASA — `https://www.easa.europa.eu/en/domains/drones-air-mobility`):**
- *Regulations (EU) 2019/947 & 2019/945* (Open, Specific, Certified categories), **SORA 2.5**, and **Light UAS Operator Certificate (LUC)** (allowing trusted infrastructure operators to self-authorize BVLOS flights).
- **U-space Regulation (Implementing Regulation (EU) 2021/664):** The world's first legally binding UTM regulation mandating Network Identification, Geo-awareness, Flight Authorization, and Traffic Information via certified USSPs.
- 🇨🇳 **China (CAAC — "Low-Altitude Economy"):**
- China's *Interim Regulations on the Flight Administration of Unmanned Aircraft* (effective Jan 2024) opened uncontrolled airspace below **$120 ext{ m}$ ($400 ext{ ft}$)** via the national **UOM** platform and **5G-Advanced (5G-A) Integrated Sensing and Communication (ISAC)** cellular towers (which use 5G base station radio waves as continuous low-altitude radar to track drones!).
- **CAAC** awarded the **EHang EH216-S** the world's first full autonomous passenger eVTOL **Type Certificate (TC), Production Certificate (PC), Airworthiness Certificate (AC), and Operating Certificate (OC)**.
- 🇸🇬 **Singapore (CAAS & LTA):**
- *Air Navigation Part 101*, dedicated **Maritime Drone Estate** for ship-to-shore BVLOS delivery, and co-founder (with CASA Australia) of the **APAC Network for Reference Materials on AAM**.

2.2 Global Regulation of Autonomous Vehicles (AVs) & High-Risk Transport AI

Jurisdiction	Primary Legislation / Framework	How Liability, Safety & AI Are Regulated	Reference URL
🇦🇺 **Australia**	**NTC Automated Vehicle Safety Law (AVSL)** & **Road Vehicle Standards Act (RVSA)**	Establishes a national **In-Service Safety Regulator** (2026–2027). Shifts legal driving responsibility away from the human occupant when the Automated Driving System (ADS) is engaged, placing a binding statutory **"General Safety Duty"** on the **Automated Driving System Entity (ADSE)**.	https://www.ntc.gov.au/transport-reform/automated-vehicle-program

Jurisdiction	Primary Legislation / Framework	How Liability, Safety & AI Are Regulated	Reference URL
🇬🇧 **United Kingdom**	**Automated Vehicles Act 2024** *(Royal Assent May 2024)*	Creates the **Authorised Self-Driving Entity (ASDE)** and **No-User-in-Charge (NUIC)** operator classes. Grants the human "User-in-Charge" **statutory immunity from traffic offenses** while the AV is engaged; makes misleading marketing ("autonowashing" of L2 ADAS as "self-driving") a **criminal offense**.	https://www.legislation.gov.uk/ukpga/2024/10/contents
🇪🇺 **European Union**	**EU AI Act (Regulation (EU) 2024/1689)** + **UNECE WP.29 (UN R155, R156, R157)**	**Annex III (Point 2)** explicitly classifies AI systems used as **safety components in road, rail, water, and air traffic management** as **HIGH-RISK AI**. Mandates continuous risk management (Art. 9), data governance (Art. 10), automatic black-box event logging (Art. 12), **Human-in-the-Loop oversight** (Art. 14), and adversarial cyber robustness (Art. 15).	https://artificialintelligenceact.eu/
🇺🇸 **United States**	**NHTSA FMVSS**, **Standing General Order (SGO 2021-01)** & **AV STEP** + State Permits	NHTSA regulates vehicle safety defects and mandates crash telemetry reporting within 1–5 days under SGO 2021-01; **California CPUC/DMV, Arizona, and Texas** issue state commercial driverless robotaxi & trucking deployment permits (Waymo, Zoox, Aurora).	https://www.nhtsa.gov/automated-vehicles-safety