

Technical specification

Agencies, the case lifecycle, devices, the device gateway, alarms, curfew and zone rules, the control room, case management, enrolment, the field app, court evidence, deployment and service for asasii emd.

Deployment

Where it runs	In Malaysia: the agency's own data centre or a Malaysian government cloud
Device data	Devices report to the platform's own gateway, never to a device maker's cloud or portal
Maps	Self-hosted map tiles served from inside the platform; no position goes to an outside map service
Agencies	One national platform shared by the prison department, the courts and the police department, with each agency's data kept apart
Consoles	Control room console for large screens, case management, enrolment and devices, court portal, and administration
Field app	For responders and enrolment officers: response requests, navigation, on-scene outcome, photos, and fitting and removal checklists
The person on monitoring	No app; the tag's SOS button and two-way call
Languages	English throughout: screens, evidence documents, letters and SMS
Modes	Production and Training, with training data kept apart and deleted after seven days
Installed by	idataraya, who installs it, customises it and keeps it current

Who places a person on monitoring

Prison Department	Community supervision: parole and licensed release
Courts	Bail or a court order with electronic monitoring as a condition
Police Department	Supervision orders for people under police supervision
Wording	Order wording on screens is sample text until each agency confirms its own

The case lifecycle

Order	Sets the home address, curfew hours, exclusion zones, inclusion zones, reporting rules and an end date
Enrolment	Photo, MyKad or passport number, address and next of kin; the tag paired by IMEI and SIM, fitted and locked; the home beacon installed and paired; the first good fix confirmed; the rules from the order loaded and reviewed
Monitoring	A 24-hour control room watches a live map and an alarm queue
Alarm handling	Acknowledge, call the wearer through the tag, check the map and history, then resolve, escalate to the case officer or request a police response; every step timestamped
Case management	The case officer owns the caseload, sees compliance, records contact and requests rule changes within the order, approved by a supervisor
Court evidence	Breach reports and location history produced as signed evidence documents
End of order	The device removed, inspected, cleaned and returned to stock; the case archived, kept for the agency's retention period and then purged

Ankle tag

Positioning outdoors	GPS, BeiDou, Galileo, GLONASS, QZSS, SBAS and NavIC, with assisted GNSS
Positioning indoors	Wi-Fi, Bluetooth and mobile network positioning, fused with satellite fixes
Accuracy	Under 1 m in open sky; cold start under 24 s, hot start under 1 s; 1 Hz update rate
Network	4G with 2G fallback, multi-band; Nano SIM
Without signal	Positions and alarms stored on the tag and uploaded when the network returns
Battery	2,000 mAh lithium, about 7 days at a 1-minute reporting interval with 6 hours of movement a day
Charging	From a dedicated power bank, about 120 minutes
Strap	Silicone with stainless steel and optical fibre; tensile strength up to 150 kg; an alarm the moment the strap is cut or broken; sizes from 140 to 315 mm
Housing	Skin-friendly PC and ABS, sealed to IP68
Size and weight	81 x 60 x 26 mm, 105 g
Updates	Firmware over the air

Ankle tag power bank

Battery	10,000 mAh lithium
Charging time	About 180 minutes
Housing	PC and ABS, sealed to IP67
Size and weight	83 x 62 x 39 mm, 220 g

Wrist or ankle bracelet

Positioning outdoors	GPS and BeiDou
Positioning indoors	Wi-Fi, Bluetooth and mobile network positioning
Network	4G and 2G; positions sent to the platform in real time
Battery	2,500 mAh internal: up to 4 days at a 1-minute interval, up to 14 days at a 5-minute interval
Charging	Charged while worn, on the wrist or the ankle, from a clip-on 5,000 mAh power bank that charges it about twice
Strap and lock	Silicone with a 0.3 mm steel sheet embedded, and a lock with a stainless steel cover
Removal alarm	Releasing the lock or cutting the strap raises a removal alarm on the platform, with a voice alert on the device
Power	Cannot be turned off by the wearer; turns on by itself after charging
SOS	An SOS button that calls up to three numbers set from the platform
Housing	High-strength nylon and glass fibre, sealed to IP68
Size and weight	60 x 53 x 26 mm without the strap, 205 g with it
Operating range	-20 to 60 °C, 5 to 95% humidity, non-condensing

Home beacon

Connection	Bluetooth 5.0 to the tag, up to 60 m in an unobstructed space
Battery	5,400 mAh, non-rechargeable, about two years
Mounting	Wall or floor, with screws, indoors or outdoors
Housing	PC and ABS, sealed to IP68
Size and weight	90 x 100 x 25 mm, 300 g
Updates	Over Bluetooth

Device gateway

Purpose	Takes in every device's messages and turns each maker's protocol into one event model
New models	Added at the gateway without changing the rest of the platform
Device settings	Reporting interval, SOS numbers, home Wi-Fi and beacon pairing set from the platform
Firmware	Rolled out over the air, in stages, by the platform admin
SIM cards	Managed with the device they sit in

Alarms

From the device	Strap cut or opened, lock released, power bank removed, low battery, battery critical, device offline or no data, GPS lost, SOS pressed, device turned on after charging
From the platform	Curfew breach, exclusion zone entered, inclusion zone left, zone schedule breach, no movement for too long, device not charged by the reminder time, unexpected location jump
Severity	Critical, High, Medium or Low, each with a response target time
Playbooks	A playbook of steps per alarm type, set by each agency
Outcomes	Resolved with a reason, escalated to the case officer, or a police response requested
Notification	Alarm sound on the console until the alarm is opened; SMS alerts to staff where the agency sets them

Curfew and zone rules

Curfew	Checked from the home beacon, the home Wi-Fi and the position together; hours by day of the week
Exclusion zones	Places a person must keep away from, drawn on the map with a buffer
Inclusion zones	The area a person must stay in, with its own schedule where the order sets one
Zones library	Places each agency uses often, kept to add to an order without drawing them again
Rule changes	Requested by the case officer within the order, approved by a supervisor, recorded on the case

The control room

Alarm queue	A grid of open alarms by severity, with the person, agency, alarm, age against the target and the operator
Map wall	Every person on monitoring live on the map, with their zones; a dark large-screen theme
History	Played back on the same map for any period
Person record	Photo, order, curfew, zones, devices and battery, the case officer, alarms and contacts
Two-way call	The operator calls the wearer through the tag
Shift handover	Open alarms, escalations and police responses handed over and accepted on the record

Case management

Caseload	Order, end date, compliance this week, open alarms, last contact and next report date per person
Compliance	Curfew kept, zones respected, the device charged and worn, by day and by week
Contact log	Visits, calls and reports recorded on the case
Letters and SMS	To the person on monitoring, recorded on the case
Early removal	Needs a second person's approval

Court evidence and the court portal

Evidence documents	Breach reports and location history, signed, with a map
Integrity	A hash of the contents and a verification code on every document
Verification	Anyone holding a printout can check its code against the platform
Court portal	The court's own cases, compliance summaries, evidence requests and downloads

Roles

Control room operator	Watches the map and queue, handles alarms, calls wearers
Shift supervisor	Assigns and reassigns alarms, approves escalations and rule changes, runs shift handover

Case officer	Owns cases, contact log, compliance, rule-change requests and court reports
Enrolment officer	Registers people, fits and removes devices, installs beacons
Field responder	Receives response requests on the field app, navigates, reports the outcome
Court registrar	The court's own cases, compliance summaries and evidence
Agency admin	Staff, roles, posts, zones library, playbooks and device stock for the agency
Director	Read-only dashboards and reports
Platform admin	idataraya: agencies, device catalogue and firmware, integrations, system health and audit

Service

Agreement	Yearly, covering releases, security patches, device firmware rollouts, support and incident response
Hosting	Stays with the agency, in Malaysia
Pilot	One control room and one office first

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