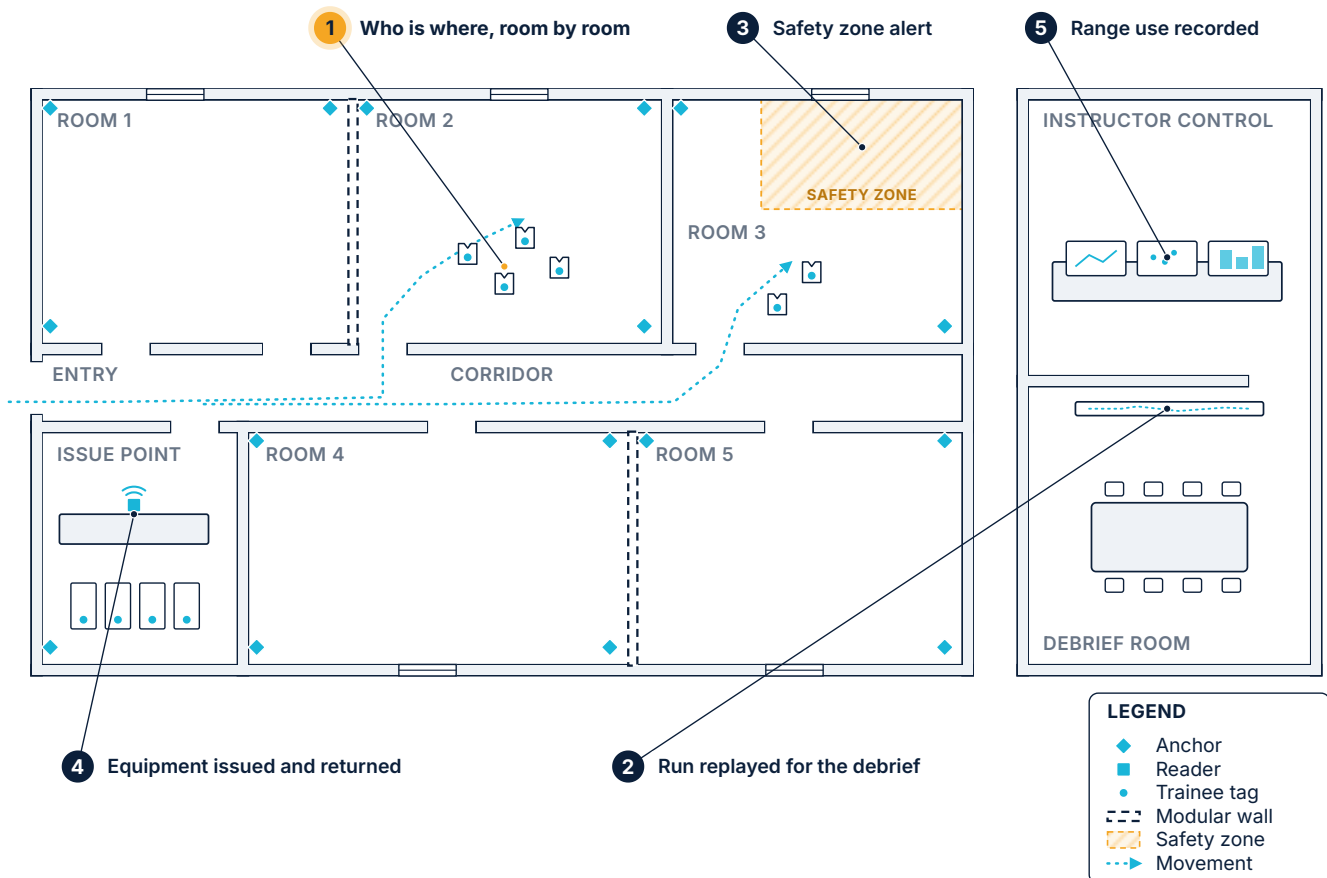


DEFENCE AND POLICE · CQB TRAINING IN SHOOT HOUSES AND MODULAR RANGES

The team is in. The instructor sees one room.

A plain guide for military and police training estates on close quarter battle (CQB) training, also called close quarter combat (CQC): seeing who is where in shoot houses and modular ranges, and replaying each run for the after action review, the debrief after each run. It also covers training weapons, the armoury and heart rate.



Callouts match the use cases on page 2. Legend: an **anchor** is a fixed unit that locates trainee tags; a **reader** reads passive RFID (radio-frequency identification) tags, which have no battery; a **modular wall** can be moved between serials. Terms used: 2D code: a square barcode.

Planning a new shoot house or modular range? Tracking is easier to plan in before walls, power and network points are fixed. Talk to us early, and bring your main CQC supplier to the call if you like.

WHO SHOULD READ WHAT

KPI: key performance indicator, a measure you track. Everyone: your own row and KPI are in the table on page 4.

Training estate and range managers

Page 2: use cases 4 and 5. Page 3: challenges.

Instructors and training officers

Page 2: use cases 1 and 2 and the KPIs you would own.

Range safety officers

Page 2: use case 3. Page 3: safety and live fire.

IT, security and procurement

Page 3: data security, links and the questions to ask.

Armoury and stores staff

Page 2: use case 4 and weapon tracking.

One next step: book a free 30-minute defence scoping call.

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Book a defence scoping call

What goes wrong today

Who is in which room?

Instructors cannot see every room at once.

Debriefs from memory

Helmet cams and recall miss part of the run.

Safety zones by eye

A breach is seen late, or only on video.

Range use guessed

Bookings show the plan, not actual use.

USE CASES

Numbered to match the floor plan on page 1. Each card ends with the technology that usually fits.

1 Who is where, room by room, live

Pain: Instructors follow one team and lose sight of the others once they are inside the rooms.

What good looks like: Instructors see each trainee room by room, live, from the control room, without stopping the run.

Usually fits: wearable tags and fixed units, technology chosen per building, confirmed in the survey

2 Each run replayed for the debrief

Pain: The debrief relies on memory, notes and helmet cam clips, and on arguments about who went where.

What good looks like: Each run can be replayed: entry order, time in each room, spacing and hold-ups in doorways, in your usual debrief format.

Usually fits: the same tags, linked to your debrief or training software, confirmed in the survey

3 Safety zones and boundaries

Pain: A trainee crossing into a safety or out-of-bounds zone is spotted late, or only afterwards on video.

What good looks like: Zone entries are flagged to instructors and logged for review. Your range safety rules and staff stay in charge.

Usually fits: wearable tags, with zones agreed with your range safety officer, confirmed in the survey

4 Equipment issued and returned

Pain: Simulation weapons, marker equipment, radios and tags are counted out and back by hand.

What good looks like: Each item is logged to a person at issue and return, and anything still out is listed before the range closes.

Usually fits: passive RFID or 2D codes at the issue point, confirmed in the survey

5 Range use for planning

Pain: Bookings show what was planned, not which rooms and layouts were used, or for how long.

What good looks like: Recorded use by room, layout and unit supports range planning, investment cases and maintenance.

Usually fits: data from the same tags, reported in your own format, confirmed in the survey

ALSO COVERED

- **Zone access:** entries checked against access rights.
- **Weapon tracking:** each training weapon located in the run.
- **Mustering:** a headcount on networks you control.
- **Heart rate:** per trainee, with consent, kept on site.

KPIS TO TRACK

A KPI is a number you track before and during the pilot. **EXAMPLE (ILLUSTRATIVE)**

KPI	WHO OWNS IT	EXAMPLE (ILLUSTRATIVE)
Time to prepare the debrief	Instructor or training officer	Shorter vs memory
Runs that had to be repeated	Chief instructor	Fewer repeats
Safety zone entries flagged	Range safety officer	7 / quarter
Items still out at range close	Range or stores staff	0 open
Booked range hours used	Training estate manager	About 6 in 10

We agree how each KPI is measured, and the baseline, in the pilot plan. Examples are not client results.

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What makes CQB tracking hard

What matters, and what to watch for

Challenge	Why it matters	What to watch for
Radio in dense walls and steel	Steel, ballistic panels and doors block or bounce radio, so a trainee can show in the wrong room.	A system shown in a demo hall but never tried in walls like yours.
Walls that move	Layouts change between serials, so last week's room map can be wrong today.	Systems that need a specialist visit after every layout change.
Tags on people and equipment	Tags get knocked, soaked, crushed in falls and swapped between trainees.	Tags that snag or add bulk, or charging that becomes a daily chore.
Smoke, strobe and darkness	Cameras and helmet cams lose detail in smoke, flash and low light.	Relying on video alone, or claims never tested with your effects running.
Live fire and safety	Equipment in the line of fire gets damaged. An alert that fails silently is worse than none.	Anything sold as a safety system. Tracking supports your range staff; it never replaces them.
Data security and accreditation	Data on named trainees must meet your security and privacy rules, and any union consultation.	Cloud-only systems, data leaving site, or equipment your network cannot approve.
Targetry, simulators and training software	Replays help most when hits, breaches and effects share one timeline with movement.	Closed systems, and integration claims that turn out to be a screenshot.
Supplier lock-in	Tags, fixed units and software from one supplier often only work together.	No data export, closed formats, and licence costs that rise once you depend on it.

QUESTIONS TO ASK TECHNOLOGY PROVIDERS

Ask every supplier the same questions, and ask for answers in writing.

1. Can we trial it in our own building, with our walls and doors, before we commit?
2. What happens when we move walls between serials, and who updates the layout?
3. How does it tell rooms apart when a trainee stands at a wall or in a doorway?
4. What does the instructor see live, and what does the replay show?
5. Where is the data stored, who sees it, and can it run only on our own network?
6. Which links to our targetry, simulators and training software exist today?
7. How are tags worn, charged, swapped and replaced, and who does that work?
8. If we change supplier later, what do we keep: data, tags, fixed units?

Bring the replies and a layout or photos (unclassified) to a free 30-minute call.

How TRACIO helps

Independent, hands-on, and alongside your main CQC supplier

- **Mix of technologies:** UWB, BLE, RFID and 2D codes, combined to suit your building.
- **Trial first:** rental pilot equipment in your facility, judged on KPIs agreed first.
- **Integration:** position data into your simulator or AAR software through its SDK or API, under your IT and security rules.
- **Alongside your main CQC supplier:** we add tracking and replay without taking over their scope.
- **Survey and installation support:** worldwide, and we can run the work in your language.



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What it means for you: find your role and your KPI

YOUR ROLE	WHAT IT MEANS FOR YOU	YOUR KPI
Training estate or range manager	Use by room and layout, for planning.	Booked range hours used
Instructor or training officer	Every room live, and runs you can replay.	Time to prepare the debrief
Chief instructor	Fewer repeat runs, clearer debriefs.	Runs that had to be repeated
Range safety officer	Zone entries flagged for review.	Safety zone entries flagged
Range or stores staff	Items still out listed before the range closes.	Items still out at range close
IT and information assurance	A data handling plan you sign off first.	Data handling plan signed off
Armoury staff	A live count, and who drew which weapon.	Weapons not returned
Finance, procurement and leadership	Payback on your numbers, then a go or no-go.	Payback months, go or no-go

Data handling plan signed off: agreed before any pilot equipment arrives. Your unit decides what is recorded.

How a TRACIO project works: five stages

1 Discovery

Your pain points, site, process and KPIs.

2 Assess and shortlist

Site survey, then the options that fit compared.

3 Pilot with KPI baseline

KPIs measured first. Pass marks agreed in writing before set-up.

4 Integrate

If useful, one agreed link into your training software, under your change control.

5 Multi-site roll-out

After a go decision, one facility or layout at a time.

How a pilot runs: set-up, then live weeks in normal use, then a short written report with a go or no-go.

Technology: we use a mix of UWB, BLE, RFID and 2D codes, chosen and combined to suit each building, and linked to your training software, simulators and targetry.

Questions we hear

"We already have a system."

We give a free second opinion and check how it performs against your KPIs, using your live data and a site visit.

"How do we know it will work here?"

Judge us on method: a pilot, KPIs measured before and during it, and a written go or no-go.

"Does it work with our simulators?"

Yes. Position, weapon and heart-rate data go into your simulator or AAR software through its SDK or API.

"Which technology do you use?"

A mix: UWB for position, BLE for heart-rate sensors, RFID and 2D codes for weapons and kit, chosen per building, with pilot, survey and installation support.

Free second opinion

Send us your technology provider's quote or spec for a free second opinion. What to send: the quote or spec, a floor plan or site photos, item counts and your current process. For controlled or classified material, describe it on the call first and we agree an approved transfer route.

Return on investment (illustrative)

- **Instructors:** debrief prepared in minutes, not from memory
 - **Training:** fewer repeated runs, more serials per day
 - **Armoury:** stock checks in minutes, fewer lost items
 - **Range:** more of the booked hours used for training
 - **Safety:** zone entries flagged and logged for review
- Payback is modelled on your own numbers in the pilot. Example: about 14 months (illustrative, not a client result).

Why TRACIO: we work for you, not for the technology providers. We compare the options across the market that fit your site, provide site surveys and installation support, and work worldwide under your change control.

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