Pilot Brief 1 — Bio■Aware Workforce Analytics (Team■Level, Privacy■First)

Problem to prove

Managers need leading indicators of fatigue/heat risk that are simple, ethical, and useful for operational decisions—not medical surveillance. Research indicates leading indicators support proactive safety, and adoption hinges on usefulness, ease, pilotability, and compatibility.

Objective (60–90 days)

Quantify whether team■level exposure signals (e.g., time in heat■risk zones, shift fatigue flags) help managers prevent near misses or reprioritize work/rest schedules.

Hypotheses

- H1: Alerting on WBGT/Heat Index thresholds at team level reduces time spent above risk thresholds by ≥20%.
- H2: Teams using a standardized HRV protocol (same time, posture, duration) show clearer fatigue trends correlated with near■miss patterns.
- H3: Managers perceive ≥30% time saved vs. manual checks for heat/fatigue planning.

Scope & signals

- Signals: Heat (WBGT/Heat Index), workload/time■on■task, optional opt■in HRV snapshots (protocolized), near■miss/proximity events from Safety Twin Lite.
- Views: Team■level only (no individual dashboards).
- Privacy: Ingest → compute team KPI → discard raw biometrics; provide consent & retention statements (US/EU variants).

Success metrics (decision■grade)

- Decrease in time in high■heat bands per shift.
- Decrease in near■miss frequency during high■exposure windows.
- Manager utility score ≥70% (clarity for planning).
- Pilot extension / LOI for live deployment.

Data & methods

Use Safety Twin Lite map + WBGT/Heat Index model; add a lightweight HRV protocol to reduce noise. Weekly report: exposure minutes, alerts, actions taken, and near■misses, with notes. Include prevention cost context from national injury cost data.

Timeline

Weeks 1–2: setup + baseline → Weeks 3–8: intervention → Weeks 9–10: readout.

Deliverables

Pilot dashboard access, weekly one■pager, end■of■pilot Decision Memo with metrics & recommendations.

Key references

Safety Science (leading indicators); National Safety Council Injury Facts (costs); HRV stress evidence (peer■reviewed); adoption predictors (usefulness, ease, pilotability, compatibility).