

Mine & Quarry Radar Coverage Assessment Input Checklist

For open-pit mines, quarries, haul roads, stockpiles and large industrial terrain

Purpose: Complete this worksheet before requesting a coverage concept, configuration review, or project proposal. Attach drawings/maps where requested. Unknown items may be marked TBD.

1. Site & Mission Profile

Site	Mine / quarry name: _____ Country/Region: _____
Primary purpose	☐ Perimeter intrusion ☐ Vehicle/personnel monitoring ☐ Restricted zone ☐ Asset protection ☐ Other: _____
Site scale	Approx. area: _____ km² Pit depth / elevation range: _____ m Perimeter length: _____ km
Operating pattern	☐ 24/7 ☐ Day shift ☐ Night shift Major blasting / crushing / loading windows: _____

2. Terrain & Obstruction Inputs

Feature	Describe / Measure	Risk to Coverage
Open pit / benches	Depth, bench heights, slope angles: _____	☐ LOS masking ☐ Multipath ☐ Near-field
Haul roads	Main routes / grades / traffic density: _____	☐ Clutter ☐ Track merging ☐ Occlusion
Stockpiles / berms	Locations and approximate heights: _____	☐ Shadow zones ☐ Temporary change
Plant / conveyors	Crushers, conveyors, buildings, steel structures: _____	☐ Fixed clutter ☐ Moving machinery
Vegetation / seasonal	Trees / dust / rain / fog / snow, if applicable: _____	☐ Attenuation ☐ False alarms

3. Targets & Zones

Target	Expected speed / size	Zone / route	Required output
Person / intruder	_____	Fence / ridge / road / restricted area	Detect / Track / Alert / EO verify
Light vehicle	_____	_____	Detect / Track / Classify
Heavy vehicle	_____	_____	Detect / Track / Classify
Drone (if applicable)	Type / RCS: _____	Altitude / route: _____	Detect / Stable track / EO verify

4. Candidate Radar Sites

Site ID	Coordinates / Elevation	Mounting Height	Power / Network	Key Obstruction
S1	_____	_____ m	_____	_____
S2	_____	_____ m	_____	_____
S3	_____	_____ m	_____	_____

Site ID	Coordinates / Elevation	Mounting Height	Power / Network	Key Obstruction
S4	_____	_____ m	_____	_____

5. Coverage Design Inputs

Priority zones	Mark high-consequence areas and required overlap/redundancy on the attached map.
Blind-zone tolerance	Acceptable near-field / terrain shadow zones: _____
Redundancy	☐ Single coverage acceptable ☐ Dual coverage required ☐ N-1 resilience required in selected zones
EO/IR handover	Existing/planned camera locations and acquisition/recognition ranges: _____
Network architecture	Backhaul type / bandwidth / latency / remote maintenance constraints: _____

6. Acceptance Test Inputs

Test element	Define before FAT/SAT	Project requirement
Routes	Person/vehicle/drone routes, headings, speeds, elevations	_____
Track metric	First detection vs stable track vs classification	_____
Detection probability	Number of runs and required success rate	_____
False / nuisance alarms	Observation period, operational state, reporting method	_____
Evidence package	Track logs, screenshots, route files, timestamped results	_____

7. Required Attachments

Attachment	Preferred format	Provided?
Topographic map / DEM / survey	GeoTIFF / CAD / GIS / KMZ	Y / N
Site boundary and zones	KML/KMZ / DWG / PDF	Y / N
Candidate-site photos	360° panorama + mounting structure	Y / N
Traffic / operating map	Haul roads, plant, conveyors, blasting areas	Y / N
Existing security architecture	CCTV / EO/IR / VMS / C2 / network diagram	Y / N

Submission & Review

Prepared by Name / Company: _____	Contact Email / Phone: _____	Date / Version Date: _____ Ver.: _____
Attachments: ☐ Site plan / GIS / KMZ ☐ Photos ☐ Existing system diagram ☐ Datasheets ☐ Other: _____		

Note: Midradar may request additional project data before providing a coverage concept or configuration recommendation. Final performance depends on target characteristics, environment, installation geometry, system configuration and acceptance criteria.