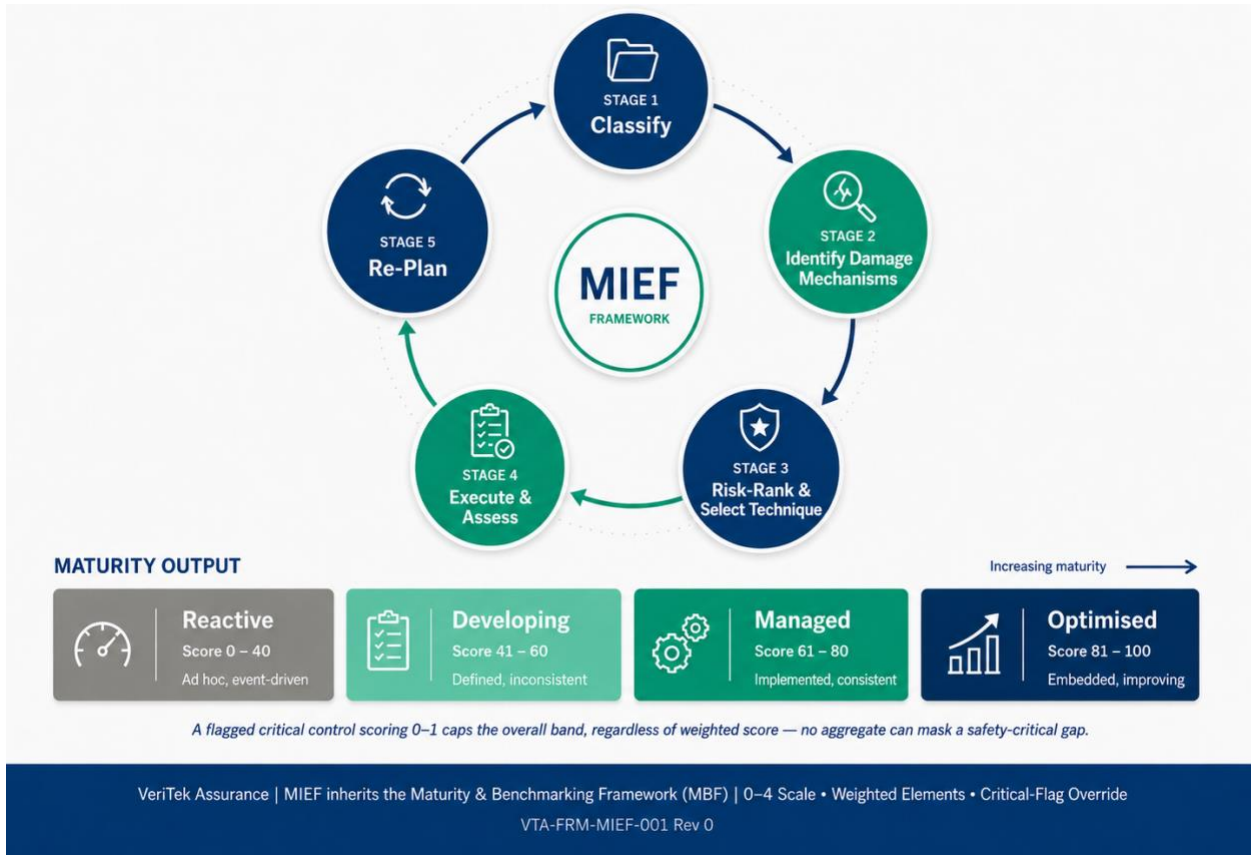


MECHANICAL INTEGRITY & INSPECTION EXCELLENCE (MIEF) FRAMEWORK

Equipment-Specific Inspection Planning and Interval Selection beneath AIX



<p>Overview</p> <p>MIEF is the equipment-specific specialisation beneath AIX, covering fixed and rotating equipment inspection planning and the dedicated Corrosion Management System (CMS) and Pipeline Integrity Management System (PIMS) instruments. Where AIX governs programme architecture, MIEF governs inspection technique and interval selection.</p>	<p>The VTA Difference</p> <p>MIEF is the only VeriTek Assurance framework that scores threat interaction explicitly, not just threat presence, reflecting the API 1173 requirement that single-threat assessment is structurally unconservative.</p>
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The 5-Stage Methodology:

Stage	Name	Function
1	Classify	Establish asset population by equipment class (vessels, piping, tanks, pipelines, rotating equipment) and applicable post-construction code.
2	Identify Damage Mechanisms	Apply API RP 571-aligned damage-mechanism screening per asset, feeding the CMS instrument and PIMS threat-category assessment.
3	Risk-Rank & Select Technique	Apply RBI logic (API 580/581) to select inspection type, NDE technique, and interval, from code-minimum to fully risk-based.
4	Execute & Assess	Conduct inspection per qualified personnel (API 510/570/653/571), and apply Fitness-for-Service (API 579/ASME FFS-1) to any identified defect.
5	Re-Plan	Update remaining-life calculations and reassessment intervals based on findings, closing the loop into the next inspection cycle.

Scoring Logic via the AIMS Instrument

MIEF inherits MBF through two instruments. CMS (40 questions, 10 elements, **4 critical flags**) addresses corrosion management specifically. PIMS (38-question Tier-2 / 18-question Tier-1, 10 weighted elements, **6 critical flags**) addresses pipelines, covering all nine B31.8S/API 1160 threat categories including interacting threats. MIEF's distinguishing feature is threat-interaction scoring.

The VTA Difference:

MIEF scores threat interaction explicitly, not just threat presence (for example, third-party damage plus corrosion, or SCC plus cyclic pressure), satisfying the API 1173 requirement that single-threat assessment is unconservative.

Instrument Family MBF in Production:

This framework deploys the Maturity & Benchmarking Framework (MBF) through the following instrument(s). Each applies the same 0–4 response scale, weighted-element structure, four-band model, and critical-flag override logic, calibrated to the domain.

Code	Instrument	Mat. Q	Elem.	Flags	Codes
CMS	Corrosion Management System	40	10	4	NACE/AMPP · API 571
PIMS	Pipeline Integrity Management System	38	10	6	B31.8S · API 1160/1173

Engagement:

This framework deploys through a Tier-1 Health Check as the entry diagnostic, followed by the full Tier-2 Maturity Assessment and an engineer-issued Initial Assessment Report. The report delivers the full element profile, the critical-flag register, the maturity band, and a risk-weighted priority-gap list with an improvement roadmap.