ASSETSTAGE
DATA STAGING & QUALITY PLATFORM

SFI CMMS Implementation Checklist

The Complete Checklist for Implementing SFI Coding in Your Maritime CMMS

How to Use This Checklist

This checklist covers every phase of implementing SFI coding in your CMMS, from licence acquisition to fleet-wide rollout. Use it to:

- Track progress through each implementation phase
- Ensure nothing is missed before loading data into production
- Coordinate between technical superintendents, CMMS administrators, and vessel crews
- Provide documentation for audits and project governance

Each section builds on the previous one. Complete them in order for best results.

Pre-Implementation

- [ ] SFI User Licence Certificate purchased from SpecTec for each vessel/site
- [ ] SFI manuals distributed to project team (A5 book, database file, or both)
- [ ] Project sponsor identified (Technical Director or Fleet Manager level)
- [ ] Implementation team assembled: technical superintendent, CMMS administrator, chief engineer from pilot vessel, procurement representative
- [ ] Target CMMS platform confirmed and version documented
- [ ] Hierarchy depth decision made: which equipment gets detail-level coding, which stays at sub-group level

- [ ] Naming convention standard drafted and agreed by stakeholders
- [ ] Pilot vessel(s) selected
- [ ] Timeline and milestones defined with realistic allowances for data cleansing

Data Audit

- [ ] All data sources identified: legacy CMMS, spreadsheets, paper logs, OEM manuals, class records
- [ ] Master equipment list consolidated from all sources
- [ ] Ghost assets identified and flagged for removal
- [ ] Naming inconsistencies catalogued across fleet
- [ ] Missing attributes identified: serial numbers, OEM details, installation dates
- [ ] Orphaned work orders and maintenance history identified
- [ ] Decision made on historical data: what migrates, what gets archived, what gets discarded
- [ ] Criticality assessment completed for all equipment (safety-critical, operationally critical, non-critical)

SFI Mapping

- [ ] Each equipment item assigned an SFI code from licensed documentation
- [ ] Multi-function equipment classified by primary function
- [ ] Custom/non-standard equipment reviewed (Groups 0 and 9 used only where genuinely necessary)
- [ ] Auxiliary systems (piping, valves, instrumentation) coded under parent system, not standalone
- [ ] Fleet standardisation check: same equipment type on same vessel type gets same SFI code
- [ ] Spare parts numbered using SFI detail code + sequential identifier
- [ ] Parent-child hierarchy relationships defined and documented
- [ ] Mapping reviewed and approved by technical superintendent and chief engineer

Data Staging and Validation

- [ ] Staging environment set up (dedicated tool or controlled spreadsheet structure)
- [ ] Equipment data loaded into staging environment
- [ ] SFI code assignments validated against licensed standard
- [ ] Parent-child hierarchy checked for completeness (no orphaned children, no missing levels)
- [ ] Naming convention compliance verified across all records
- [ ] Cross-vessel consistency checks completed for fleet standardisation
- [ ] Gaps identified: equipment physically present but missing from data
- [ ] Duplicate records identified and resolved
- [ ] Staged data reviewed and signed off by engineering team before CMMS loading

CMMS Configuration

- [ ] Equipment templates/asset classes configured to match SFI sub-groups
- [ ] Attribute fields defined for each equipment type
- [ ] Failure coding structure configured (failure modes, causes, detection methods)
- [ ] Spare parts catalogue structure aligned with SFI hierarchy
- [ ] Maintenance task templates created and linked to SFI-coded equipment
- [ ] Manufacturer maintenance intervals loaded
- [ ] Class survey requirements mapped to specific equipment
- [ ] Shore-to-ship synchronisation tested (if applicable)
- [ ] User roles and data entry permissions defined

Data Loading

- [ ] Test load completed with subset of pilot vessel data
- [ ] Loaded data verified against staging data (spot checks on hierarchy, codes, attributes)
- [ ] Work order generation tested against SFI-coded equipment

- [ ] Spare parts retrieval tested using SFI-based search
- [ ] Reporting tested: can you filter and aggregate by SFI group across the fleet?
- [ ] Full pilot vessel data loaded after test validation
- [ ] Post-load data quality audit completed

Rollout and Training

- [ ] Chief engineer training delivered: navigation, work orders, failure recording
- [ ] Technical superintendent training delivered: fleet analysis, data quality, reporting
- [ ] Procurement training delivered: SFI-based spare parts numbering and search
- [ ] User guides created for day-to-day operations (platform-specific, not generic)
- [ ] Help desk or support contact established for first 90 days
- [ ] Pilot vessel running for minimum one full maintenance cycle before fleet expansion
- [ ] Lessons learned captured and applied to next wave of vessels

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Data Governance (Ongoing)

- [ ] Data steward role assigned (who maintains the SFI hierarchy?)
- [ ] New equipment process defined: coding, naming, and data entry before first maintenance task
- [ ] Change control process for hierarchy modifications
- [ ] Quarterly data quality review scheduled
- [ ] Annual review of SFI mapping against fleet changes (new vessels, equipment upgrades, decommissioning)

Data Audit Template

Use this structure when building your master equipment list during the audit phase. Populate one row per equipment item across all vessels.

Field	Description	Example
Vessel Name	Ship or installation name	MV Northern Spirit
Current Equipment ID	As-is identifier from legacy system	EQ-4471
Current Name/Description	Current name, however inconsistent	SW Cooling Pump No.1
Physical Location	Where on the vessel	Engine Room, Port Side
OEM Manufacturer	Equipment manufacturer	Alfa Laval
Model	Manufacturer model number	SB-150
Serial Number	If available	ALV-2019-08841
Year Installed	Installation or commissioning date	2019
Criticality	Safety-critical / Operationally critical / Non-critical	Operationally critical
Proposed SFI Code	Assigned during mapping phase	713.002
Proposed Standardised Name	Per your naming convention	Seawater Cooling Pump No.1
Parent Equipment	SFI-coded parent in hierarchy	713 (Central Cooling System)
Maintenance Plan Exists?	Y/N (is there a current PM schedule?)	Y
Maintenance Source	OEM manual / Class requirement / Operating experience	OEM + Class
Spare Parts Linked?	Y/N (are BOMs available?)	Y
Notes / Issues	Migration concerns, data gaps, anomalies	Serial number unverified

Equipment Mapping Decision Guide

When SFI mapping isn't obvious, use this decision logic.

Question 1: What is the equipment's primary function?

SFI is function-oriented, not location-oriented. A pump in the engine room could belong to several SFI groups depending on what it does. Classify by function, not by physical position.

Question 2: Does it serve one system exclusively, or multiple systems?

Equipment dedicated to one system belongs under that system's SFI group. Equipment serving multiple systems (like a common seawater cooling pump) is classified under the primary system it supports or under Ship Common Systems (Group 8) if it's genuinely shared.

Question 3: Is it a standalone asset or a component of a larger assembly?

Standalone assets get their own SFI detail code and appear as discrete items in the hierarchy. Components (sub-assemblies, parts) are typically captured within the parent equipment's spare parts list rather than as separate hierarchy entries, unless they are maintainable items with their own PM schedules.

Question 4: Is there an existing SFI sub-group that fits, or is this genuinely unique?

Check thoroughly before using Groups 0 or 9. Most equipment that seems unique to a particular vessel type actually fits within the standard SFI structure when classified by function. Reserve Groups 0 and 9 for genuinely novel equipment with no functional equivalent in the standard.

Question 5: How have you classified this equipment type on other vessels?

Fleet consistency matters more than getting the "perfect" code for one vessel. If you've already mapped similar equipment on a sister vessel, use the same classification, even if an argument could be made for an alternative code. Consistency enables fleet-wide analysis; individual optimisation doesn't.

SFI Structure Quick Reference

Main Groups

Group	Name	Covers
0	Ship General	Administrative functions, certificates
1	Hull	Structure, framing, outfit
2	Cargo Equipment	Holds, handling, tank systems
3	Ship Equipment	Mooring, anchoring, navigation, safety
4	Accommodation	Bridge, cabins, galley, HVAC
5	Crew Equipment	Communications, workshop
6	Machinery Main Components	Engines, propellers, shafting
7	Systems for Machinery	Fuel, lube, cooling, compressed air
8	Ship Common Systems	Fresh water, electrical, fire-fighting
9	Unassigned	For equipment not covered elsewhere

Code Structure

```
Main Group (1 digit)   → Major function (e.g., 6 = Machinery Main Components)
Group (2 digits)       → System (e.g., 60 = Diesel engines for propulsion)
Sub-group (3 digits)   → Component type (e.g., 601 = Diesel engines)
Detail Code (6 digits) → Specific item (e.g., 601.001 = Main Diesel Engine No.1)
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Common Examples

SFI Code	Equipment
601.001	Main Diesel Engine No.1

611.001	Auxiliary Engine No.1
616.001	Turbocharger (Main Engine)
631.001	Main Propeller
632.001	Bow Thruster
641.001	Propeller Shaft
701.001	Fuel Oil Purifier No.1
721.001	Seawater Cooling Pump No.1
722.001	Fresh Water Cooling Pump No.1
731.001	Main Air Compressor No.1
735.001	Stern Tube Forward Seal
851.001	Main Switchboard

Hierarchy Depth Decision Guide

When to Code to Detail Level (6 digits)

- Safety-critical equipment (steering gear, fire pumps, emergency generator)
- Main propulsion machinery (main engines, turbochargers, propeller shaft)
- Equipment with individual PM schedules
- Class survey items tracked separately
- High-value equipment with dedicated spare parts

When Sub-group Level (3 digits) Is Sufficient

- Non-critical support equipment
- Equipment maintained as part of a system (not individually)
- Low-cost items that are run-to-failure
- Equipment without dedicated spare parts inventory

Mixed-Depth Strategy

Most implementations benefit from mixed depth:

Equipment Category	Recommended Depth	Rationale
Main engines	6-digit with component level	High value, complex PM, class survey
Auxiliary engines	6-digit	Individual PM schedules, class survey
Steering gear	6-digit	Safety-critical, ISM requirement
Fire pumps	6-digit	Safety-critical, SOLAS requirement
Cargo pumps	6-digit	Operational critical, individual PM
Mooring winches	6-digit	Individual PM, class survey
Bilge pumps	6-digit	Safety requirement
HVAC units (accommodation)	3-digit	Non-critical, group maintenance
Lighting circuits	3-digit	Maintained as system
Deck fittings	3-digit	Low maintenance intensity

Common Naming Convention Patterns

Structure

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[Equipment Type] [System Qualifier] [Sequential Number]
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Examples

Current (Inconsistent)	Standardised
SW Cooling Pump	Seawater Cooling Pump No.1
SW CLG P/P 1	Seawater Cooling Pump No.1
SW Pump (Port)	Seawater Cooling Pump No.1
ME LO Purifier	Lubricating Oil Purifier (Main Engine) No.1
Purifier #2	Lubricating Oil Purifier (Main Engine) No.2
FO Trans Pump	Fuel Oil Transfer Pump No.1
Aux Gen 1	Auxiliary Generator No.1
D/G No.1	Auxiliary Generator No.1
Genset A	Auxiliary Generator No.1

Rules

1. Use full equipment names, not abbreviations
2. Include system qualifier where needed to distinguish (e.g., "Seawater" vs "Fresh Water")
3. Use sequential numbers consistently across the fleet
4. Match SFI functional classification in the name
5. Keep names concise but unambiguous

Measuring Success

Track these indicators to confirm your implementation is delivering value.

Data Quality Metrics

Metric	Target	How to Measure

SFI coding completeness	100% of active equipment	Count of equipment with valid SFI code / total equipment
Naming convention compliance	95%+	Sample audit of equipment names against standard
Work order linkage	100%	Work orders correctly linked to SFI-coded assets
Duplicate records	0	Periodic duplicate detection queries
Orphaned records	0	Equipment with no parent / work orders with no equipment

Operational Efficiency

Metric	Baseline	Post-Implementation Target
Time to locate spare parts	Measure current	50% reduction
Time to generate work orders for similar equipment	Measure current	70% reduction
Class survey preparation time	Measure current	40% reduction
New vessel setup time	Measure current	60% reduction (using templates)

Fleet Analysis Capability

After implementation, you should be able to answer:

- [ ] Which SFI sub-groups account for highest maintenance costs?
- [ ] What are the failure rates for the same equipment type across vessels?
- [ ] Which vessels have overdue maintenance on safety-critical equipment?
- [ ] What spare parts are common across the fleet?
- [ ] How do maintenance costs compare between sister vessels?

Platform-Specific Notes

AMOS (SpecTec / Kongsberg)

- Native SFI support (SpecTec owns both SFI and AMOS)
- Technical account structure based on SFI Group System
- Spare part numbering: SFI detail code + consecutive numbers (9-10 digits)
- Shore-to-ship sync requires consistent hierarchy in both environments
- Template library should align with SFI codes for work order rollup

IBM Maximo

- No native SFI support, but flexible data model accommodates it
- Build asset templates mirroring SFI sub-groups
- Use classification/specification framework for SFI taxonomy
- Map SFI hierarchy to functional locations (FLOCs)
- Data loading via MXLoader or integration framework (validate staging data first)

DNV ShipManager

- Native integration with DNV class requirements
- Configure SFI mapping to match platform's hierarchy structure
- Survey tracking built in

Other Platforms (Bass, Danaos, SERTICA, MESPAS)

- Understand platform's native hierarchy structure
- Configure equipment templates before loading data
- Define failure codes, spare parts linkage, and maintenance tasks in advance
- Test with single vessel before fleet rollout

Project Timeline Template

Phase	Duration	Key Deliverables

Pre-Implementation	2-4 weeks	Licence, team, hierarchy depth decision, pilot vessel selection
Data Audit	4-6 weeks	Master equipment list, inconsistency catalogue, migration decisions
SFI Mapping	4-8 weeks	All equipment mapped, naming standardised, hierarchy documented
Staging & Validation	2-4 weeks	Validated data ready for loading, sign-off from engineering
CMMS Configuration	2-4 weeks	Templates, failure codes, maintenance tasks configured
Data Loading	1-2 weeks	Pilot vessel loaded and verified
Training & Rollout	2-4 weeks	Training delivered, pilot running, lessons captured
Fleet Expansion	Ongoing	Progressive rollout to remaining vessels

Total for pilot vessel: 17-32 weeks depending on fleet size and data complexity.

Need help with SFI data staging and validation? AssetStage provides a dedicated staging environment for maritime teams implementing SFI coding. Standardise naming, validate codes, check hierarchy relationships, and get engineering sign-off before loading into AMOS, Maximo, or any other platform. Contact us at sales@assetstage.io

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