CMMI Implementation by Value Stream

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CMMI

▸ CMMI provides a well-recognized basis for ensuring project success by establishing a Quality process that overarches all business and engineering activities

▸ The SSC-Atlantic Command has embraced CMMI and has moved several large pilot projects, which are representative of the work spectrum at SSC-Atlantic, to CMMI Maturity Level 3

▸ The concept behind selecting representative projects is that the processes developed for these projects could become standard processes for the Command and that these processes should be transferable to like projects

Implementation Problems

▶ One difficulty is that the diversity of the projects at SSC-Atlantic requires an overwhelming number of higher level standard processes to encompass each project type

▶ The processes that were developed for the pilot projects ended up being too project specific and are not readily transferable to other projects

▶ Only the pilot projects are truly confirmed to be operating at CMMI Maturity Level 3; the operating process maturity of most of the other projects at SSC-Atlantic has not been conclusively established

Implementation Innovation

▸ This innovation provides an improved methodology for institutionalizing CMMI within all projects at SSC-Atlantic by utilizing a Value Stream approach

▸ Developing the proposed methodology will install CMMI best practices in SSC-Atlantic across a larger framework of unifying functional activities that covers all projects

▸ The resulting classification of projects will promote a more time and cost efficient CMMI appraisal methodology for all SSC-Atlantic projects
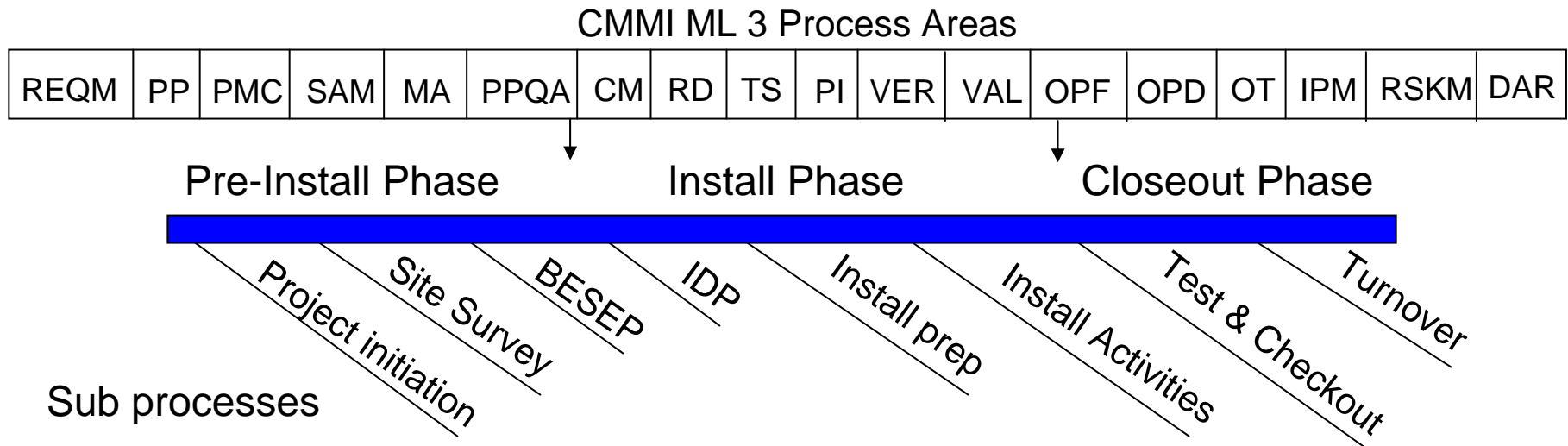
Innovation Concept

▸ The proposed Value Streams that encompass the essential project work done at SSC-Atlantic could be defined as follows:

- Research and Development (including hardware and software)

- Acquisition

- Integration (including platform and systems)

- Installation (including ship and shore)

- In-Service Engineering Activity (ISEA)

- Software Support Activity (SSA)

- Repair (Depot-type)

Value Stream Structure

- ▸ Provides overview of process
- ▸ Identifies all associated sub processes
- ▸ Provides for CMMI artifact collection
- ▸ Includes other functionality (CM, ILS, etc.)

Installation Value Stream

CMMI ML 3 Process Areas

REQM	PP	PMC	SAM	MA	PPQA	CM	RD	TS	PI	VER	VAL	OPF	OPD	OT	IPM	RSKM	DAR

Pre-Install Phase   Install Phase   Closeout Phase

Project initiation
Site Survey
BESEP
IDP
Install prep
Install Activities
Test & Checkout
Turnover

Sub processes

Value Streams

▸ The CMMI compliance of individual VSs will be established by a thorough evaluation of the VS against the CMMI specific and generic practices

▸ Once the CMMI compliance of a VS is determined by representative, associated projects, then future projects would be able to prove their CMMI compliant behavior by demonstrating that they are following the processes and protocols of their associated VS
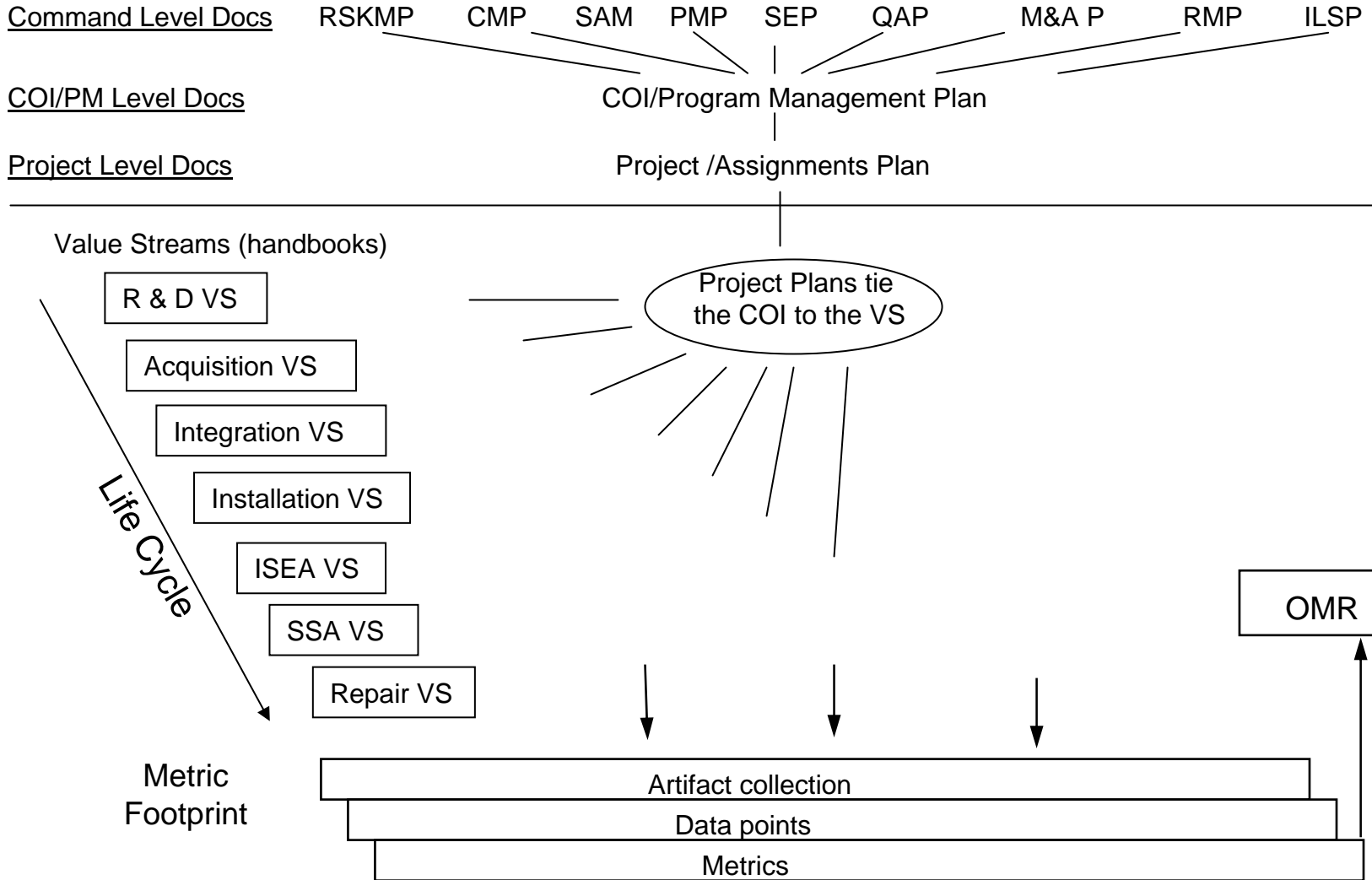
VS Compliance

▸ The degree and nature of compliance for each specific and generic practice will vary by VS

▸ The sizing and type of a project determines the artifacts generated

▸ System Type requirements will differ but not the artifacts

▸ The requirements definition for the VS will have the latitude to accommodate the different sizes and types of the constituent projects associated with the particular VS or type of a project

Value Streams

▸ This VS framework will allow for a major portion of CMMI compliant documentation to be developed only once, saving time and money, which in the past has been spent to develop compliant documentation for each project individually.

▸ In addition, a common set of standard metrics can be obtained for each Value Stream and exchanged with the Organizational Measurement Repository (OMR).

QA / CMMI Structure

Command Level Docs   RSKMP   CMP   SAM   PMP   SEP   QAP   M&A P   RMP   ILSP

COI/PM Level Docs   COI/Program Management Plan

Project Level Docs   Project /Assignments Plan

Value Streams (handbooks)

R & D VS

Acquisition VS

Integration VS

Installation VS

ISEA VS

SSA VS

Repair VS

Life Cycle

Project Plans tie
the COI to the VS

OMR

Metric
Footprint

Artifact collection

Data points

Metrics

Benefits

▶ This innovative classification of projects will promote a more time and cost efficient CMMI/SCAMPI appraisal methodology for all SSC-Atlantic projects

▶ The Value Streams methodology will provide a common set of Command level metrics

▶ Those metrics can be placed in the OMR that is used to predict and help shape project success

▶ An enhanced OMR is also necessary for accomplishing the related goal of achieving CMMI Maturity Levels 4 and 5

Additional Benefits

- A structured set of Handbook documents that describes and illustrates step-by-step work efforts

  – (This can also be used as the basis for training employees)

- Standardized processes and data collection methods for the Command

- A concise method utilizing LSS to update, modify, and improve these standard processes

- Standard Project Review data

- A more economical and efficient appraisal methodology that will affirm the process maturity levels for many projects that might not otherwise be individually appraised