EXPRO National Manual of Assets and Facilities Management

Volume 15, Chapter 1

Performance Monitoring Introduction Guideline

Document No. EOM-ZF0-GL-000001 Rev 001

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Document Submittal History:

Revision:	Date:	Reason For Issue
000	28/03/2020	For Use
001	18/08/2021	For Use

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1.0 PURPOSE

This document lays out standards by which Performance Monitoring (PM) shall be established, and includes International Best Practices, wherever applicable. It aims to encourage Entities to follow standards during their PM process and to ensure that they effectively measure their progress according to a pre-set plan, so as that they achieve success, and improve business processes.

This introductory chapter provides guidelines to the Entities concerning PM concept, significance, and tools.

2.0 SCOPE

This document is developed specifically for the Asset and Facility Management (A&FM) within government Entities and serves as a guideline, and describes fundamental aspects of the A&FM PM concept. Although references are made to commonly used A&FM performance evaluation and monitoring methods, each entity shall establish its own individual vision, objectives, and models regarding its PM, and according to its own pre-set mission, vision, and strategic plan.

This guideline aims to demonstrate the key aspects of PM, and bond other related chapters within this volume together, in order to assist with seeing the PM 'big-picture'.

Furthermore, this introduction document has been developed to guide Entities to utilize current best-practice methods, and concepts, in order to achieve high performance. Entities should fulfil National Manual of Assets and Facilities Management (NMAFM) standards and guidelines during the performance evaluation and monitoring process.

2.1 Performance Monitoring (PM) Volume Structure

This section will briefly describe the PM Volume Structure and its chapters, as well as the expected output of each chapter when applied within A&FM, and their relationships as illustrated in Figure 1.

This PM Volume consists of 4 chapters as follows:

Chapter 1 (Introduction):

- 'Guideline Introduction' - which introduces the concept of the PM approach and its related techniques. This guideline also briefly summarizes the content of other chapters in the volume, and shows the expected output of each method, if applied correctly within the Entity's A&FM domain. The output of applying the PM concept, would be to identify the Entity's performance objectives and requirements, with regard to their A&FM process.

Chapter 2 (Key Performance Indicators-KPIs):

- Explains the concept, framework, process, and tools for developing KPIs that are critical components of the PM approach. Applying the KPI framework should help Entities identify all A&FM performance indicators, and build their own specific KPI repository.

Chapter 3 & 4 (Dashboard "Management & User" Guidelines):

- Explain the Dashboard concept and process. They also describe how the results of the KPI analysis process will be represented from both the management and user perspectives. The conclusion of both chapters are concrete dashboard reports, either technology or paper-based, and according to the Entity's A&FM needs and objectives. Whereas, chapter 3 scoped on management dashboard, and chapter 4 scoped to User dashboard.

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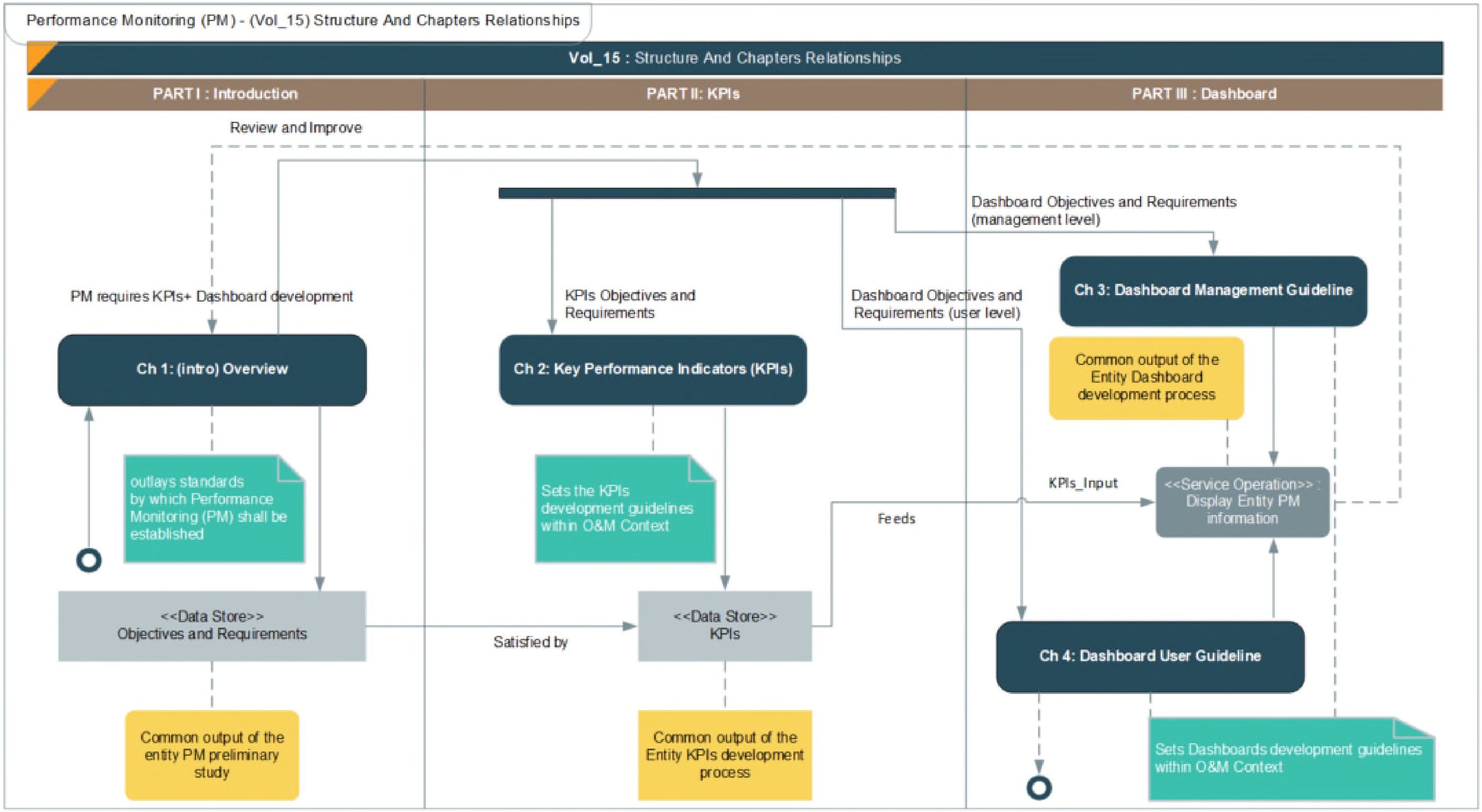

Figure 1: Volume 15 Overall Structure and Relationship

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3.0 DEFINITIONS

Term	Definition
Benchmarking	An evaluation that identifies quantified performance levels from precedent and appropriate levels of performance with specific quantitative insight and best practices for a project
Dashboard	The ‘Dashboard’ is a visual reporting tool, developed to meet the needs of audiences at various levels in an organization. It allows users, at a glance, to understand the progress made towards achieving one or more objectives. These may be represented, categorized, and/or arranged on a single screen or multi-layered screens.
Entity	Entity - includes Government Ministry, or any other agency that is authorized by the Government Ministry, to work on its behalf.
Key Performance Indicator (KPI)	KPIs are quantifiable measurements agreed by stakeholders, which reflect the critical success factors of assets, operations, or services to be delivered. International Facility Management Association (IFMA)
Expro	Government Expenditure & Projects Efficiency Authority
Operations and Maintenance (A&FM)	All activities that performed to operate and maintain any asset, facility, and/or Entity.
Performance Evaluation	An internal form used to evaluate and record a contractor's performance and suitability, for future work for an Entity.
Performance Monitoring (PM)	PM is an approach where the Entity applies several activities, to ensure that the A&FM process, projects, departments, systems, and employees are all progressing towards pre-set goals and objectives, as established by their senior-level management.
Joint Coordinating Board (JCB)	JCB is a formed/assigned working group, that is responsible for developing the organization’s KPI according to the current best practices
Acronyms	
AMS	Asset Management Software
APM	Asset Performance Management
BIFM	British Institute of Facilities Management (now known as IWFM)
BoK	Body of Knowledge
DT	Dashboard Team
IFMA	International Facility Management Association
ISO	International Organization for Standardization
JCB	Joint Coordinating *Board*
KPI	Key Performance Indicator
NAR	National Asset Register
NCLOM	National Committee for Legislation and Standardization of Operation and Maintenance
NMAFM	National Manual of Assets and Facilities Management
PM	Performance Monitoring
RCM	Reliability-Centered Maintenance

Table 1: Definitions

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4.0 REFERENCES

- British Institute of Facilities Management (BIFM) – Sourcing Strategies
- ENT-ZA0-SD-000001 – Asset Management System Standard Requirements
- ENT-ZA0-SD-000002 – Assets Register Standard Requirements
- ENT-ZC-SD-000001 – Condition Assessment Standard Requirements
- EXP-IT0-PL-000005 – Expro Dashboard Development Scope
- EXP-P00-PR-000001 – Expro Monitoring and Evaluation Operating Procedure
- EOM-ZO0-PR-000096 System Engineering Qualification Process
- EOM-ZO0-PR-000091 System Assessments and Monitoring
- Project of Survey and Study of the current Operation and Maintenance work statues at government Facilities – Executive Report (31st Jan 2016)

5.0 RESPONSIBILITIES

Role	Description
KPIs Joint Coordinating *Board (JCB)*	Responsible for developing an Entity's A&FM KPIs. The JCB shall follow the guidelines of the latest standards and best practice methodologies concerning "A&FM-KPIs development". In addition, JCB should engage all necessary stakeholders in the KPI's development process, and report the required outcome to related parties. This board is also responsible for reviewing and improving their KPIs as required, and according to any changes within the Entity's objectives. All affected stakeholders need to be involved in any KPIs changes.
Dashboard Team (DT)	Responsible for developing Dashboards as follows: Obtain Dashboard requirements Architect/design Dashboards based on needs and viewpoints Develop Dashboards aligned with KPIs Maintain Dashboards Review and Improve Dashboards
Entity Top Management	should assign/form a skilled JCB and Dashboard-Team (DT) to develop, maintain, and improve, the Entity required KPIs and Dashboards.

Table 2: Responsibilities

6.0 DEFINING PERFORMANCE MONITORING (PM)

PM is an approach wherein an Entity carries out several activities to ensure that the A&FM process, systems, and employees are progressing towards pre-set goals and objectives, as established by their top-level management.

Operational PM metrics, focus on how an Entity is doing in terms of operations; whilst maintenance performance metrics focus on any related issues affecting maintenance, including assets, process, and systems. These metrics are important in performance benchmarking, as well as in understanding any outperforming or underperforming A&FM activities.

6.1 PM Related Concepts

The following sub-sections will briefly describe the main concepts related to the PM approach.

6.2 JCB Main Activities

The KPI Working group or 'KPI Joint Coordinating *Board (JCB)'* is a team formed/assigned (gathered) based on their experience and the organization's needs. Their main objective is to define, develop, analyze, report, review, and improve the organization's KPI portfolio as illustrated in Figure 2.

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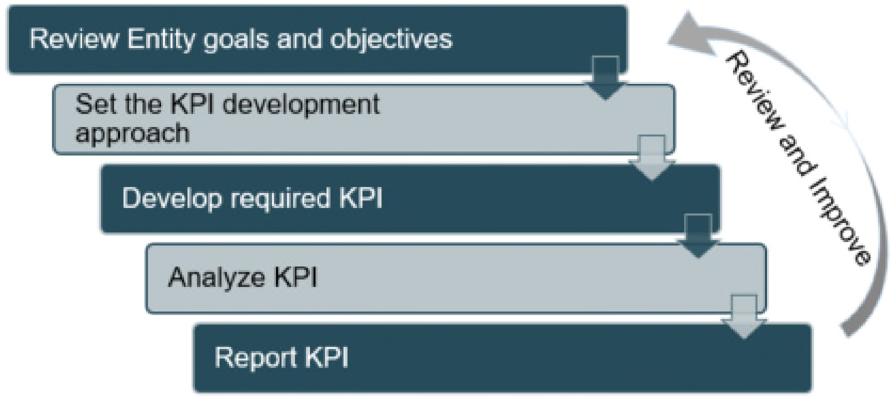

Figure 2: JCB Main Activities

6.3 Important Viewpoints to be considered by JCB during Performance Evaluation

There are some aspects need to be considered during the Entity performance evaluation planning and development process, which are demonstrated in Figure 3. The 'Maintenance view' is neglected by most current organization models. However, due to its importance to this manual nature that is concerned about 'A&FM', this view is added to the figure as a separate point, which needs to be taken into consideration during KPI development.

Entity should develop performance management system which includes:

- Effective performance of the entity based on the contributions of activities at all levels from top management policy development through to the operational level
- Performance measures should focus on outcomes that meet entities' strategic business objectives
- Performance measures should be devolved and cascaded down to the relevant team level
- A balanced set of measures should be used to measure overall contract performance (e.g. using a mix of short and long-term measures, and selecting measures that link cause and effect)
- Measures should include both assessing effectiveness (doing the right things) and efficiency (doing things right)
- Individuals' performance objectives should be aligned with achievement of overall outcomes.

Figure 4, provides a graphical representation of the recommended performance management system the various levels of performance reporting (including dashboard reports) and performance dialogues, at each level of the entity.

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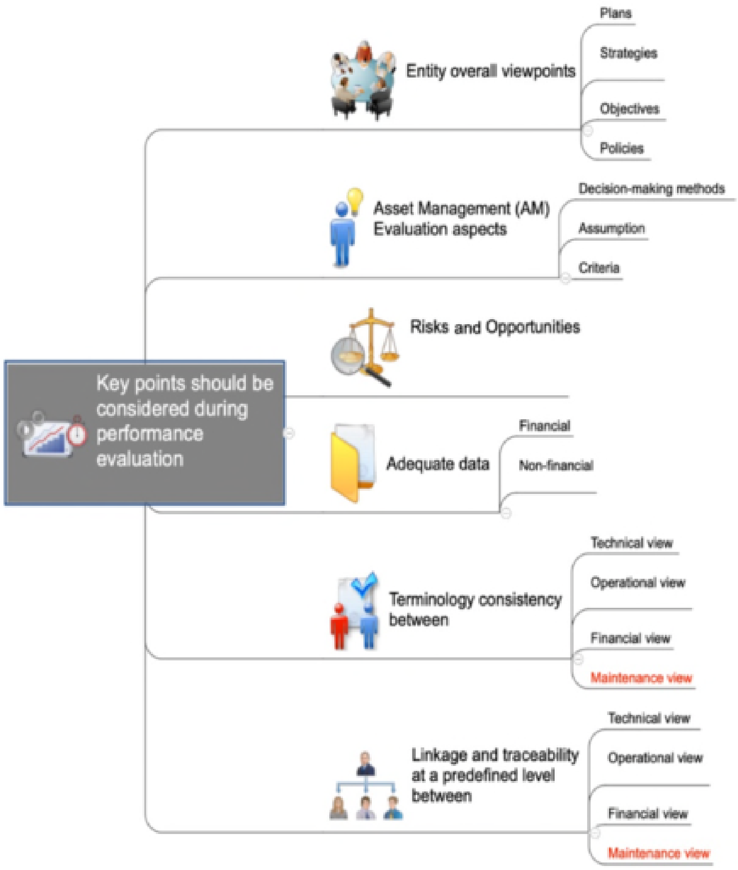

Figure 3: Important perspectives during PM activities

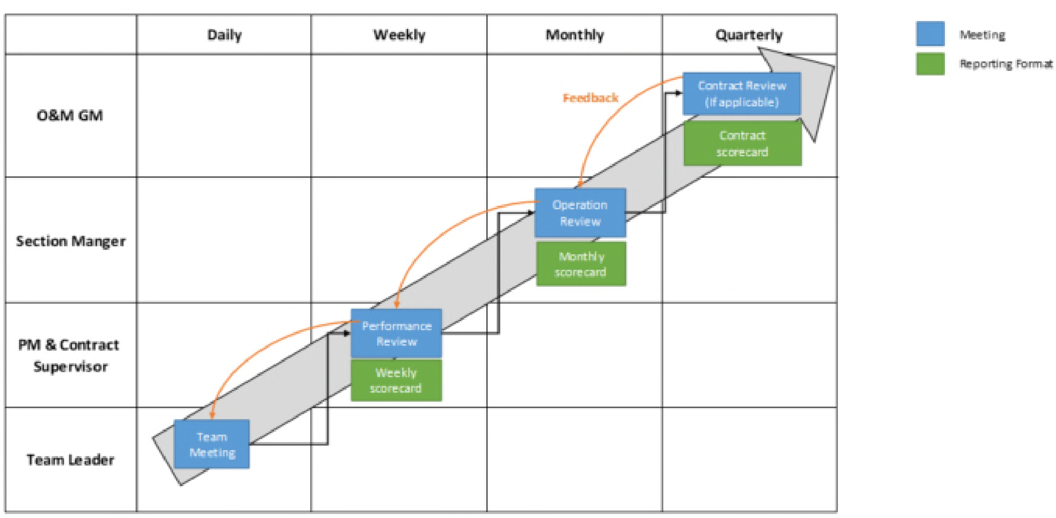

Figure 4: Example of performance reporting levels

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6.3.1 Key Performance Indicators (KPIs) & the Dashboard

The main components that form the PM approach are the KPIs and the Dashboard, where:

KPIs are quantifiable measurements, agreed by stakeholders, which reflect the critical success factors of assets or operations or services to be delivered, as per the IFMA definition. A Dashboard is a visual reporting tool that is developed to meet the needs of an audience, at various levels in an organization. A Dashboard allows users at a glance, to understand the progress toward the achievement of one or more objectives that are represented, categorized, and arranged on a single screen or multi-layered screens. Dashboards use KPIs information to display targeted information to required audiences.

KPIs JCB and DT are the two groups formed/assigned by the top-management, to develop KPIs and Dashboards, as explained in the ‘Responsibilities’ section (5.0) above.

Both the KPI and Dashboard concepts are described in separate documents within this volume, which when taken as a whole, should help the Entities perform the PM processes.

6.3.2 Asset Performance Management (APM)

The APM concept consists of data capture, integration, analysis, and visualization activities that should help in improving the reliability, maintainability, efficiency, effectiveness, fault tolerance, and availability of physical assets. APM includes concepts like condition monitoring, reactive/proactive monitoring, and Reliability-Centered Maintenance (RCM).

6.3.3 Reactive & Proactive Monitoring

Reactive Monitoring is an activity that detects past or existing nonconformities, concerning assets or any asset-related deterioration, failures, or incidents. Proactive Monitoring is an advanced activity that ensures that physical assets, and the Asset Management System are operating as intended. Both concepts are the same regarding the required output, but their main difference is timing.

6.3.4 Why Do We Need to Do PM?

There are several benefits of applying a PM approach with any organization such as:

From Entity/Organization perspective:

- PM approach is designed to support the Entity’s mission, goals, and strategies.
- Targets are planned and expectations are set at all levels of the entity
- Performance of work is, measured, monitored and reviewed on a regular basis
- Reasons for poor performance are identified
- Areas and reasons for high performance are identified and reinforced
- The Entity will be able to see if they are on the right track towards achieving their predefined strategic goals and objectives.
- Another benefit is that the output of PM activities should serve any further analysis, improvement, development, and/or adjustment to the Entity/organization strategic plan and objectives.

From Managers, Analysts, and End User’s perspective:

- To follow job progress.
- To differentiate between successful process and ineffective processes.
- To recognize and reward good achievement, while correcting and developing underachievement.
- To improve the overall business process for individual department, or specific team.
- To be able to do further perform specific analysis if required, based on reliable data.

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6.4 Processes

Based on current best practices available in the industry, the main process should guide Entities through their PM process. However, Entities should tailor the PM process to fit their overall plan and meet their overall objectives. Figure 5, illustrates main common process for PM activities.

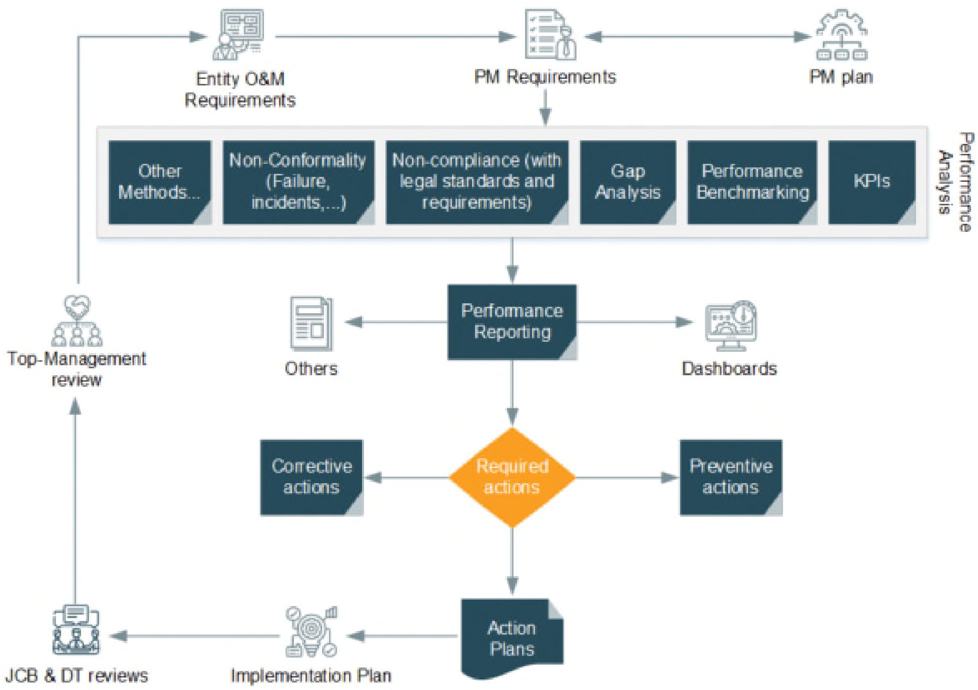

Figure 5: Common Main Process for PM within Industry Best Practices

6.4.1 PM Components within A&FM Context

PM components are part of the overall structure of any organization. Figure 6, shows the four main PM components within an Entity, in the context of A&FM domain, and their relationships with external components.

6.4.2 PM Key Viewpoints

- PM viewpoints can be classified based on major domains, such as Operation or Maintenance.
- PM viewpoints can be classified based on minor domains such as Operational, Structural, or Behavioral.
- PM viewpoints can be classified based on management levels such as Strategic, Tactical, and Detailed Operational

Thus, PM viewpoints are driven by the needs of an organization. However, the section above mentions common PM viewpoints that could be considered by Entity's during their PM activities.

Entities shall utilize the "system engineering qualification process" and "system assessments and monitoring" documents, which are included within this National Manual of Assets and Facilities Management (NMAFM), to acquire any new systems and/or services.

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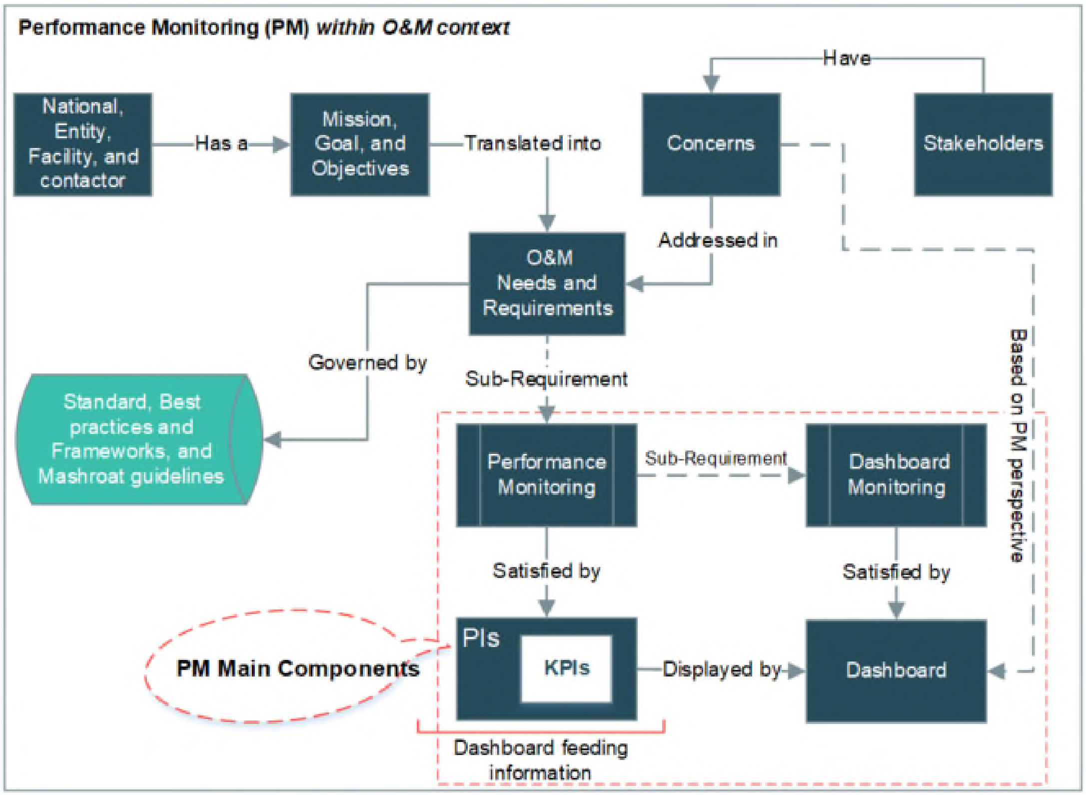

Figure 6: PM Main Components in the A&FM Context

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