
Implementing an Earned Value Management System

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Topics to be Covered

Introduction

Planning the EV Management System Implementation

Deploying the Earned Value Management System

EVM System Validation / Compliance Evaluation Review

Surveillance

Topic One

Introduction

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Definition of Earned Value Management

- A program management tool that integrates the technical, cost, and schedule parameters of a contract. [DCMA EVMIG]

Definition of the EVM System

- The integrated set of policies, processes, procedures, systems and practices that complies with ANSI/EIA-748 [NDIA PMSC]
- An integrated management system and its sub-systems [DCMA]

Requirement for an EVM System

- (a) For major acquisitions for development, in accordance with OMB Circular A-11. [FAR 34.201 Policy]
- (b) For all major acquisitions with development effort. [The Capital Programming Guide]
- (c) For major acquisition contracts that meet the thresholds and criteria contained in DoD 5000.2-R. [DoD policy]
- (d) For other acquisitions, in accordance with agency procedures. [FAR 34.201 Policy] 
- (e) For any size or type of contract 
- (f) Flowed down to subcontracts that meet the thresholds and criteria prescribed in DoD 5000.2-R. [DoD policy]

Types of EVM Systems

The Federal Government recognizes two types of EVM Systems:

1. A Compliant System; and

2. A Validated System

For DoD contracts:

- Any cost or incentive contracts and subcontracts valued at \$20,000,000 or more must **comply** with the 32 EVM System guidelines
- Any cost-type or incentive contracts and subcontracts valued at \$50,000,000 or more, the EVM system **must be validated** by the cognizant federal agency . [DFARS 234.201(1)(i)]

Compliant System

The features of a Compliant System are:

- Compliance with industry EVM standard
- Contract Performance Report (tailored)
- Integrated Master Schedule (tailored)
- Integrated Baseline Reviews
- Ongoing surveillance

No formal EVM system validation

Validated System

The features of a Validated System are:

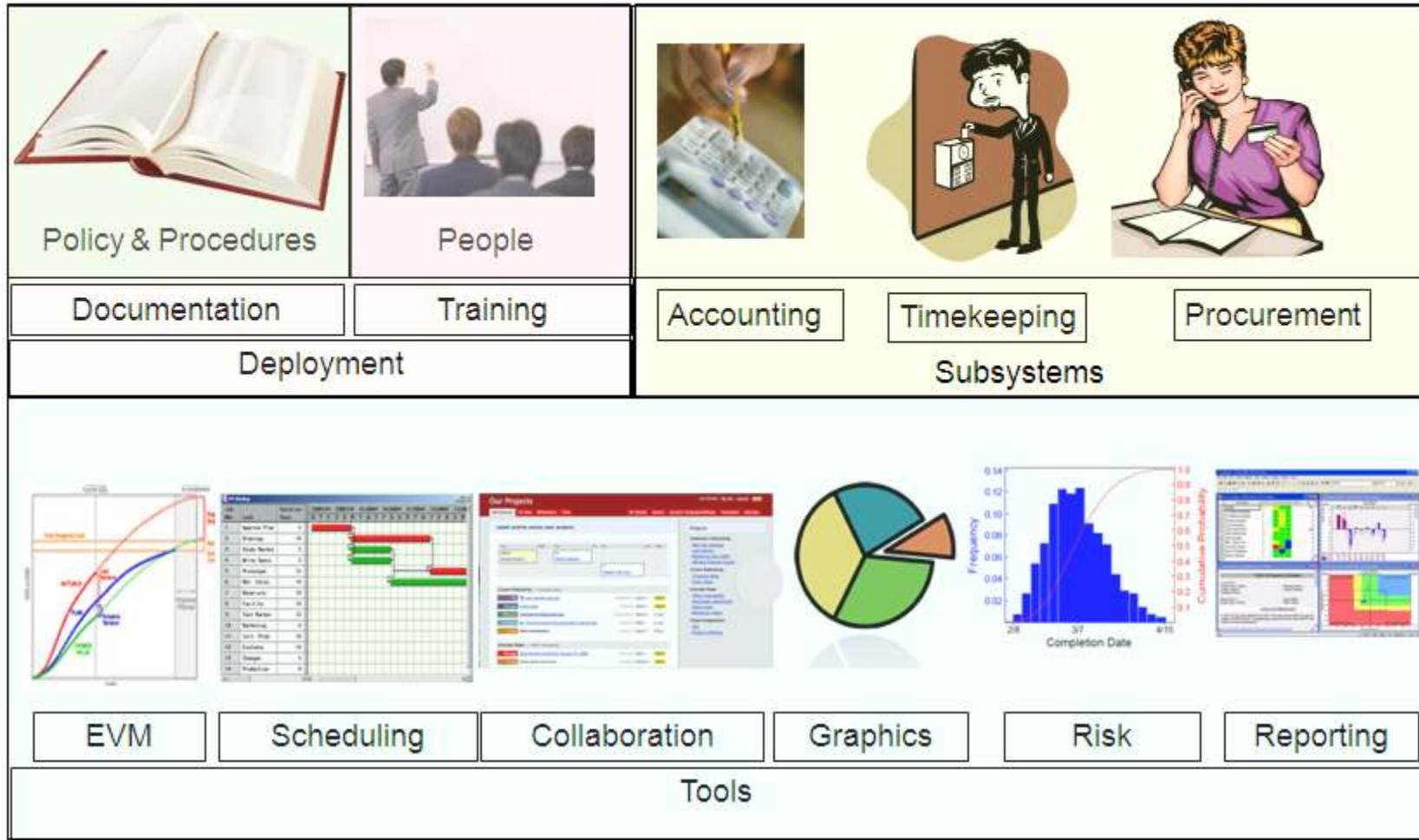
- Compliance with industry EVM standard
- Contract Performance Report
- Integrated Master Schedule
- Integrated Baseline Reviews
- Ongoing surveillance

Formal EVM system validation (i.e. the system has been found to be compliant by a Government validation review team. Compliance documented in DCMA and/or KO/ACO letter of compliance with ANIS/EIA-748 standard.)

Federal Agencies EVMS Compliance and Validation Matrix

Federal Agency	Optional	Compliance Threshold	Validation Threshold
DoD		= or >\$20M <\$50M	= or >\$50M
DoE		= or >\$20M <\$50M	= or >\$50M
DHS	>\$5M < \$20M	= or > \$20M <\$50M	= or > \$50M
FAA			= or >\$10M
NASA		= or >\$20M <\$50M	= or >\$50M
GSA	<\$20M		= or >\$20M
HHS		= or >\$10M <\$25	= or >\$25M
VA	<\$5M	= or >\$20M <\$50M	= or >\$50M
Treasury		= or >\$20M <\$50M	= or >\$50M
Commerce		= or >\$25M	

Elements of an EVM System



EVM System Readiness When Bidding

FAR Subpart 34.2 - Earned Value Management System 34.201 Policy states:

- An Earned Value Management System (EVMS) is required for major acquisitions for development, in accordance with OMB Circular A-11.
- If the offeror 's system is not compliant ;
 - Offerors shall not be eliminated from consideration for contract award because they do not have an EVMS that complies with these standards.
 - The offeror shall submit a comprehensive plan for compliance with these EVMS standards.
- The Contracting Officer may take remedial action (if the offeror does not adhere to the plan). [DCMA EVMIG]

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EVM System Implementation Project

Can take from twelve to eighteen months.

Involves :

- ❑ Planning
- ❑ Budgeting
- ❑ Assignment of resources
- ❑ Execution
- ❑ Monitoring

EVM System Implementation Process

Typically involves:

- ❑ Organizational commitment to using EVM
- ❑ Assessment of where changes or enhancements to processes are needed (Gap Analysis)
- ❑ Design for the EVMS processes
- ❑ Documented EVMS capability
- ❑ Structured training program
- ❑ Formal recognition that the EVMS meets the intent of the ANSI/EIA 748 (Certification) [NDIA]

Implementation Decision

Probably the most important element of the EVM System implementation process.

Must be an informed one, taking cognizance of the required investments:

- ❑ Time
- ❑ Human Resources
- ❑ Costs
- ❑ The impact of the change on the organization

Time Investment

The time investment involves:

- ❑ Management Review of documentation
- ❑ Progress review meetings
- ❑ Attendance at presentations by tool vendors
- ❑ Attendance at tool evaluation meetings
- ❑ Program staff, IT staff and Accounting staff consultation on system requirements and tool interfaces
- ❑ IT creation of tool interfaces

Human Resource Investment

Human resources needed are:

- ❑ Implementation Project Manager
- ❑ Budget Analyst
- ❑ Program Support Specialist
- ❑ System Administrator(s)
- ❑ Technical Writer (Part-Time)

Cost Investment

The cost investment includes:

- ❑ Remuneration for Human Resources
- ❑ Tools acquisition and training
- ❑ Tools installation and configuration
- ❑ Creating tools interfaces
- ❑ EVM training
- ❑ Progress Assessment Review (PAR)
- ❑ DCMA Compliance Evaluation Review
- ❑ System Maintenance [Surveillance, System Administration, Licenses]

Change Management

Changes resulting from EVM System:

- ❑ Operational changes;
- ❑ Technological changes;
- ❑ The attitudes and behaviors of personnel.

Mechanisms that can be utilized:

- ❑ EVM Training;
- ❑ Tool Training;
- ❑ Regularly scheduled project status meetings.
- ❑ Mentoring support;
- ❑ Coordination support during the pilot phase and IBR and CER preparation and execution.

Gap Analysis

The Gap Analysis involves determining where you are with reference to where you need to be. This process identifies:

- ❑ Policy gap (informs documentation development)
- ❑ Procedures gap (informs documentation development)
- ❑ Tools gap (informs tool selection)
- ❑ Skills gap (informs training)

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EVM System Ownership

- The EVM System Owner is the company.
- Within the company, there should be an EV Practice which will have functional responsibility and authority for ‘assuring the implementation and use of an Earned Value Management System compliant with the ANSI/EIA 748.’ [NDIA PMSC EVM System Acceptance Guide]

EV Practice Responsibility

The corporate level EV Practice will:

- ❑ Manage and maintain DCMA certification
- ❑ Undertake training, mentoring and certification of staff
- ❑ Conduct quality control analysis and audits of program procedures (Surveillance)
- ❑ Prepare and revise SOPs
- ❑ Develop templates for executive briefings

EV Practice Functioning

- An EVMS Steering Committee should be created within the company to have oversight over the EV Practice
- In order to lead, manage and coordinate the system assurance, the EV Practice will have to be fully staffed
- Operational responsibility for EVM should reside in the Program Office

Documentation

Deploying the EVM System begins with documentation that includes:

- ❑ EVM Policy statement (not mandatory but 'highly encouraged' by DCMA)
- ❑ EVM System Description (required)
- ❑ EVM Application Guide (optional)
- ❑ Standard Operating Procedures (required)
- ❑ EVM System Surveillance Plan (required)
- ❑ EVM System Revision Procedure (required)

EVM Policy Statement

According to the NDIA PMSC EVMS Acceptance Guide, at a minimum the EVM Policy Statement should include:

- ❑ Statement of commitment to the operation and maintenance of the EVMS
- ❑ Reference to policies and standards, i.e. ANSI/EIA 748
- ❑ Definition of the type of programs, contracts and projects that will use EVM
- ❑ Assignment of responsibility for the operation and maintenance of the EVMS
- ❑ Definition of program management responsibilities for implementing and using EVM
- ❑ Assignment of responsibilities to support organizations
- ❑ Requirement to conduct internal surveillance on the EVM System

EVM System Description

- Provides an understanding of each activity required to meet the EVMS standard.
- Presents the contractor's approach and schedule of internal activities to demonstrate that the system and processes meet the guidelines in the standard.
- Includes the contractor's plan for implementation of, and activities leading up to, a comprehensive review. [NDIA PMSC EVMS Acceptance Guide]

EVM Application Guide

A 'how-to' document that provides details on EV procedures such as how to:

- ❑ Take Earned Value (BCWP);
- ❑ Estimate remaining work;
- ❑ Treat accrual of project estimated actuals;
- ❑ Handle subcontractor management, materials management and change control.

Provides the basis for the development of the Standard Operating Procedures (SOPs)

Standard Operating Procedures

NDIA PMSC System Implementation Guide advises either:

- A single comprehensive Program Controls SOP;
- A series of shorter documents that address specific procedures required for EVM implementation on individual programs.

EVM System Surveillance Plan and EVM System Revision Procedure

- The EVM System Surveillance Plan will describe how the organization will periodically monitor the compliance of its system with ANSI/EIA-748.
- The EVM System Revision Procedure will document a formal change process for dealing with modifications to the system that may be required from time to time.

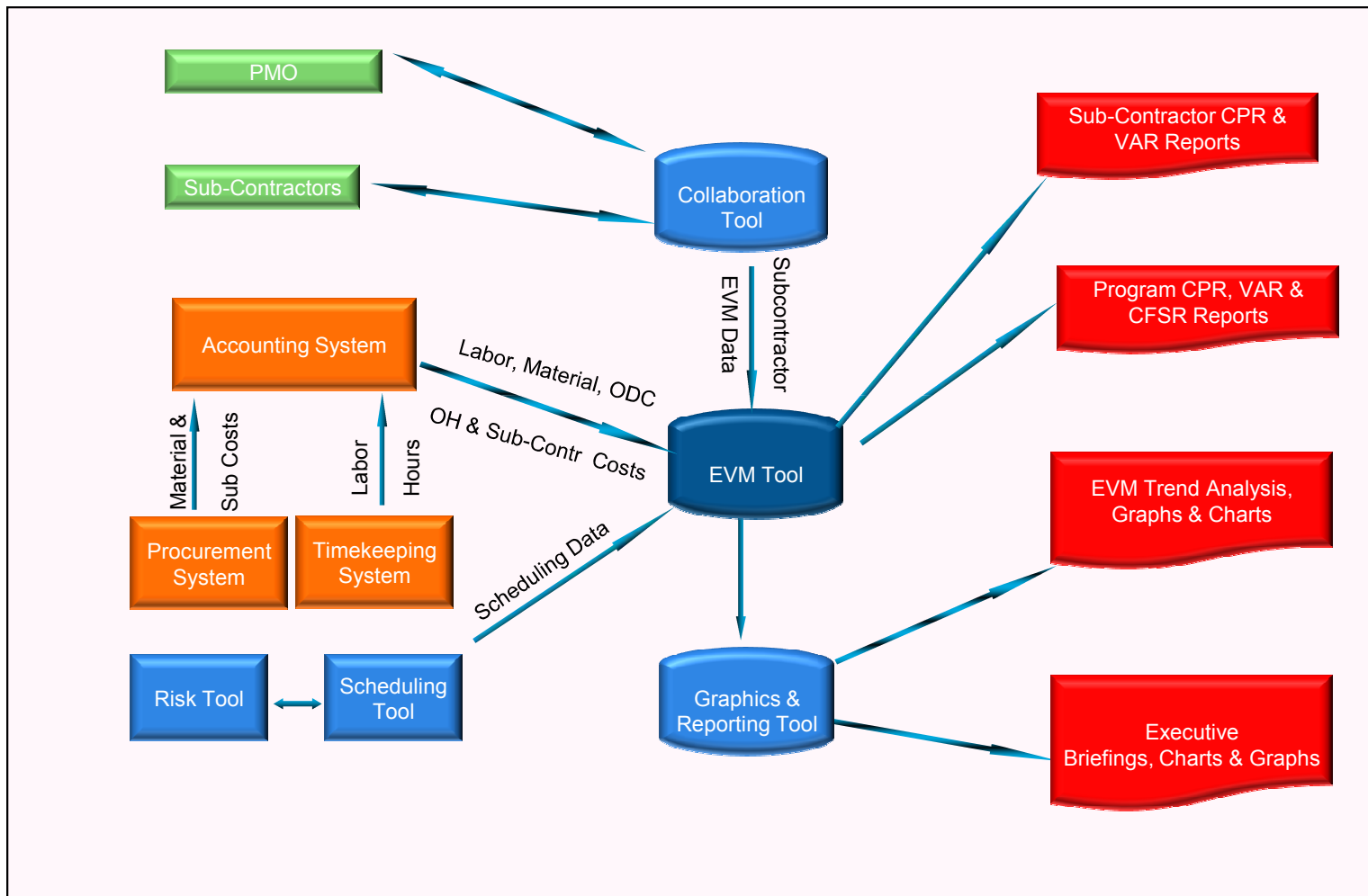
Tools

The comparison, evaluation, selection and installation of tools will flow from the tools gap analysis and involves the following steps:

- ❑ Developing end user requirements
- ❑ Viewing vendor presentations
- ❑ Evaluating tools
- ❑ Selecting tools
- ❑ Installing and configuring tools

At the end of this exercise a Program Management Information System (PMIS) will have been created

PMIS Overview



Training

The training undertaken flows from the skills gap analysis and involves following steps :

- ❑ Determining training requirements
- ❑ Researching training options
- ❑ Acquiring System Administrator, End User and EVM Training
- ❑ Delivering training
- ❑ Creating a training database (required for certification)

Sample EVM Training Matrix

Class	Description	Targets	Duration
Overview of Earned Value Management for Executives	Provides an overview of EVM	Corporate leadership, PMs	1 hour
Introduction to EVM and IBR for PMs	Operational overview of EVM	PMs, TLs, CAMs	3 hours
Earned Value Management Fundamentals for Control Account Managers	Prepares CAMs to manage a Control Account by explaining the fundamentals of EVM	CAMs, PCAs	4 hours
Applied Earned Value Analysis Workshop	Provides detailed information on how to use the system to capture, measure, record and report performance	Earned Value Analysts, PCAs, Budget Analysts	8 hours

Topic Four

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The Review

- Objective: to gain DCMA certification of the system via a System Validation / Compliance Evaluation Review
- Scheduling of actual review is dependent on the availability of DCMA resources.
- Presently between a fifteen-month to two-year backlog of EVM Systems waiting for DCMA certification.
- Applying for the review must therefore be done early in the process

The Certification Process

The Certification process involves the review of the company's EVM System, EVM Training, Surveillance capability and Corrective Actions procedures.

The Process can be lengthy (6 – 12 months)

Its length varies depending on the size and complexity of the program. Some key events are:

- ❑ Progress Assistance Visit (PAV)
- ❑ Self Assessment Review (SAR)
- ❑ Progress Assessment Review (PAR)
- ❑ Compliance Evaluation Review
 - Submission of CAPs to respond to CARs
 - Submission of CER Report
- ❑ Receipt of Letter of Acceptance or Advance Agreement

Progress Assistance Visit (PAV)

- An initial assessment of the contractor's readiness to demonstrate its EVMS compliance;
- Usually conducted within 30 days after contract award.
- Includes an initial review of the System Description.

■ Every attempt should be made to finalize the System Description during the PAV.

Self Assessment Review (SAR)

- Prior to the Progress Assessment Review.
- Assure objectivity.
- Documents to be reviewed:
 - Work Authorization documents;
 - Integrated Master Schedule;
 - Change Control Documents;
 - Contract Performance Reports;
 - Control Account Plans;
 - Other documents in the CAM Notebooks

Progress Assessment Review (PAR)

Prior to the Compliance Evaluation Review (CER).

Involves:

Preparing as for a CER

- ❑ Coordinating/Facilitating the PAR as for a CER
- ❑ Making corrections/adjustments after the PAR

Preparing for CER

Involves a number of steps including:

- ❑ Creating the required structures e.g. WBS, OBS, RAM, IMS
- ❑ Developing the Performance Measurement Baseline (PMB)
- ❑ Validating procedures
- ❑ Producing CPRs, CFSRs, VARs for at least three months

Compliance Evaluation Review Planning

Identify project(s) for Review

Make logistics arrangements for Review:

- ❑ Arrange meeting rooms
- ❑ Arrange for company security clearances for DCMA Team
- ❑ Arrange for equipment, telephone and internet access
- ❑ Schedule time for meetings with key management personnel
- ❑ Arrange for clerical/administrative assistance

Compliance Evaluation Review

The actual Validation / Compliance Evaluation Review involves the following steps:

- ❑ Prepare for the CER
- ❑ Participating in the Inbriefing
- ❑ Coordinate/Facilitate the CER
- ❑ Prepare CAPs to respond to CARs after the review
- ❑ DCMA verifies CAR corrections
- ❑ Participate in Out-Briefing
- ❑ Receive compliance recognition (AA or LoA)

Integrated Baseline Review

■ When an EVMS is required, [FAR Subpart 34.2 - 34.202.]

- Preparing for the CER gets the program staff into a state of readiness for the IBR.
- Can occur before the Compliance Evaluation Review (CER).
- The experience of going through the IBR also helps ready the program for the CER.

Topic Five

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Surveillance

Surveillance – Definition, Purpose, Objective

- The process of reviewing the health of the EVMS process applied to one or more programs.
- To focus on using the EVMS effectively to manage cost, schedule, and technical performance.
- Ensure that the key elements of the process are maintained over time and on subsequent applications.

Surveillance - Goal

Twofold goal :

- First, it ensures that company processes and procedures are being followed.
- Second, it confirms that company processes and procedures continue to satisfy the guidelines in the American National Standards Institute/Electronic Industry Alliance's ANSI/EIA) 748-A Standard for Earned Value Management Systems.

Surveillance Requirement

- On DoD contracts, DCMA + DCAA surveillance of contractor's EVMS is required whenever EVM is required.
- It starts immediately after contract award (ACA.)
- Contractors / Subcontractors internal surveillance of the EVMS is also required (EIA 5.3).
- If the parties agree to a joint surveillance arrangement, then a Joint Surveillance Agreement should be signed.

The Surveillance Organization

Establishing the company Surveillance Organization involves the following steps:

- ❑ Define the organizational level – define the level within a company where this organization can be properly located
- ❑ Define the Organizational Charter – define the surveillance organization’s charter and authority via company policy
- ❑ Define the organization’s members – staff the organization in a manner that is consistent with its chartered responsibilities. [NDIA PMSC EVM Surveillance Guide]

End of Presentation

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