OPEN ACCESS Freely available online

Journal ofAeronautics & Aerospace Engineering

Mini-Review

Process Development and Configuration Management for Aerospace Projects

Danilo Graca*

Rosen College of Aerospace Management, IACIT Soluções Tecnológicas, SP, Brazil

ABSTRACT

In this Paper the advancement of computational technology and the use of embedded software have made the systems more complex and highly integrated, this due to the large number of functionalities delivered and their applications in the most diverse areas, which includes: control aerospace vehicles such as satellites, rockets, aircraft, telemetry and remote control, etc. On the other hand, this complexity demands a robust development process, in which it is essential to version the work products and, especially, to control the changes in these products. In this way, investing and maintaining efficient configuration management should contribute to a successful and less error prone project, both in the phases of the development cycle and throughout the manufacturing process. Therefore, considering this context, I will present some steps to maintain an effective control of the configuration of a complex project, based on a method applied in the aerospace industry, which establishes key activities for the control of artifact baselines, requirements management, maintaining the product structure and delivering software releases and hardware versions. We will also deal with the concepts of configuration identification, configuration item, baseline, change management, document workflow and configuration control board, in addition to presenting some tools that will facilitate the implementation of efficient configuration management focused on complex aerospace systems.

Keywords: Configuration Management; Aerospace Engineering; Aircraft; COVID-19 Pandemic; Tourism Industry

INTRODUCTION

Design Management (DM) manages overseeing changes over the existence pattern of an item. Its significance is Design Management (DM) manages overseeing changes over the existence pattern of an item. Its significance is completely perceived in different trains, for example, plan, designing, creation and administrations. Design Management is characterized as "Setup the board is an administration discipline that applies specialized also, authoritative course to the turn of events, creation also, support lifecycle of a Configuration Item. The control is relevant to equipment, programming, handled materials, benefits, and related specialized documentation. Arrangement The board is a fundamental piece of life-cycle the executives" Here the creators unmistakably clarified the significance of Setup Management in the improvement life pattern of a item. This was featured in the examination directed by CMSTAT Corporation which depicted Configuration. The executives as the demonstration of overseeing portions of an item and configuration to guarantee that the items proceed as proposed. Every one of these methodologies of Configuration Management were summed up in the International Council on Systems.

Designing (INCOSE) Hand Book, which portrays Design Management as the way to control and archive the advancement of prerequisites. This archive pinpoints that CM manages controlling necessities all through the framework's life cycle. Design Management accordingly deals with the effect of the changes on a task. This methodology has advanced into customary Configuration Management process as appeared in completely perceived in different trains, for example, plan,

Design Management (DM) manages overseeing changes over the existence pattern of an item. Its significance is completely perceived in different trains, for example, plan, designing, creation and administrations. Design Management is characterized as "Setup the board is an administration discipline that applies specialized also, authoritative course to the turn of events, creation also, support lifecycle of a Configuration Item.

Correspondence to: Danilo Graca, Rosen College of Aerospace Management, IACIT Soluções Tecnológicas, SP, Brazil. E-mail: danilograca@gmail.com

Received: March 02, 2021; **Accepted:** March 16, 2021; **Published:** March 23, 2021

Citation: Graca D. (2021) Process Development and Configuration Management for Aerospace Projects. J Aeronaut Aerospace Eng. 10:464.

The control is relevant to equipment, programming, handled materials, benefits, and related specialized documentation.

The board is a fundamental piece of life-cycle the executives" Here the creators unmistakably clarified the significance of Setup Management in the improvement life pattern of a item. This was featured in the examination directed by CMSTAT Corporation which depicted Configuration [1].

Configuration management in aerospace projects

It has been uncovered that numerous aviation organizations are applying the most recent practices in Configuration Management for all their development capacities. In the event that the Configuration .The board isn't applied appropriately it can ominously affect the nature of the item, defer the dispatch of their item and expands the existence cycle cost of every one of their items.

So as to actualize Configuration Management effectively the underlying advance is to normalize all the procedures at all office levels over an organization. This incorporates formalizing at all the degrees of the association and having an incorporated control to deal with the change procedures and consequently screen the arrangement of an item [2].

Arrangement Management by the top tier Aerospace and Defense organizations, utilizes an a lot more extensive meaning of an item, which incorporates different procedures like design,engineering and assembling, in a joined structure. This incorporates assembling and configuration subtleties that are utilized at all the phases of the existence pattern of an item. The documentation of the item is incorporated as a feature of the Configuration the board. It is essential to these associations to cook for the prerequisites of administrative bodies, overseeing the existence cycle exercises of the item, and rigid upkeep rehearses.

Enabling configuration management

So as to actualize the prescribed procedures of Configuration Management it is important to keep up a brought together database. This improves the presentation, with insignificant blunders in the item information. This is finished with the assistance of advancements, for example, Product Data Management (PDM) and Product Lifecycle Management (PLM). PLM comprises of set of methodology utilized for actualizing Configuration Management One of the senior authorities from an Aerospace and Defense (A&D) organization depicts the significance of CM as "With a formalized Configuration Management process, the change the executives status is obvious to everybody and reports can be recovered without any problem". The setup of an item forces an extraordinary test for Aerospace and Defense enterprises. The items they grow, for the most part require an enormous number of segments/gatherings, and are profoundly intricate in nature. Also these organizations are limited by different administrative bodies and are required to oversee perplexing and assorted groups to react to all the requests of the client The central point which drives Aerospace businesses to actualize Configuration Management is conveying an item according to the client prerequisites [3].

Configuration management with systems engineering

For some businesses the setup of new item is definitely more mind boggling than the past one. Each new form frequently coordinates a bigger number of frameworks from various designing controls than the past one. It has been depicted that the 21st century building associations face another test as they endeavor to make the best items in the most limited conceivable time .Various analysts focused on the significance of Systems.

Building as the best methodology for dealing with the arrangements of complex items like in Aerospace Industry. Frameworks Engineering consolidates four concepts: requirements building, framework demonstrating, incorporated item change the executives, and quality administration to make forms for arranging and creating complex items along these lines smoothing out item advancement. Frameworks Engineering permits organizations to design their whole incorporated item creation process and afterward mimic each progression of it as they continue. Frameworks Engineering utilizes the idea of virtual item structure in the item's life cycle. This will assist associations with settling on better arranging and plausibility choices during the item's creation. Also, by permitting everybody to work from a similar arrangement of prerequisites and cooperatively sharing framework models, clients from different designing controls, for example mechanical, electrical, software, can fill in as a solitary internationally dispersed group.

Stratergic actions

Setup Management is an issue which manages whole life pattern of an item. Its effect includes directly from plan, until after deals administration of the items . The key activities recommended are: Better control of progress the board in different offices. Upgrade correspondence among assembling and plan divisions Better change the executives inside the designing office Enhance cost control in the assembling office Research was done by the Aberdeen Group in different Aerospace and Defense organizations, in dissecting the procedures to execute Configuration Management. There search indicated that larger part of the Aerospace organizations, are focusing on improving change the executives action, to adequately actualize Configuration Management.

CONCLUSION

Danilo Graca has a master's degree in space management and technology from the Brazilian National Space Research Institute, has more than 8 years of experience in the aerospace industry, working with process management for the development of aerospace systems. Currently, he works with projects and processes at IACIT Soluções Tecnológicas S / A, a Brazilian company with technological expertise in development of products and systems applied to the Defense and Public Security, Air and Maritime Traffic, Control and Navigation (CNS/ATM), Meteorology and Telemetry. Its headquarters strategically located in São José dos Campos city-major center of aerospace of Brazil.

REFERENCES

1. International Council on System Engineering, System Engineering Handbook, System Engineering Handbook: A guide for system lifecycle processes and activities. 2006.
2. The Configuration Management Benchmark Report. Aberdeen Group. 2007.
3. Wasson Jack. "Configuration Management for the 21st Century." Arizona, USA. 2007.