

AIRCRAFT LIFE CYCLE MANAGEMENT SYSTEM ARCHITECTURE FOR SOLVING COST MANAGEMENT TASKS

M M Gyazova and B A Gorelov

Moscow Aviation Institute (National Research University)

mmgyazova@mail.ru

Abstract: The article is devoted to cost management issue in the aircraft life cycle management system. In a theoretical analysis, the authors consider the main cost management components, the main automated systems used in the modern integrated information space and the universal scheme of using automated systems at product life cycle different stages for effective cost management problems solving. The research part of the article is based on production cost management scheme development, as well as the aircraft life cycle management system architecture formation, which allows solving cost management tasks, including during aircraft operation phase.

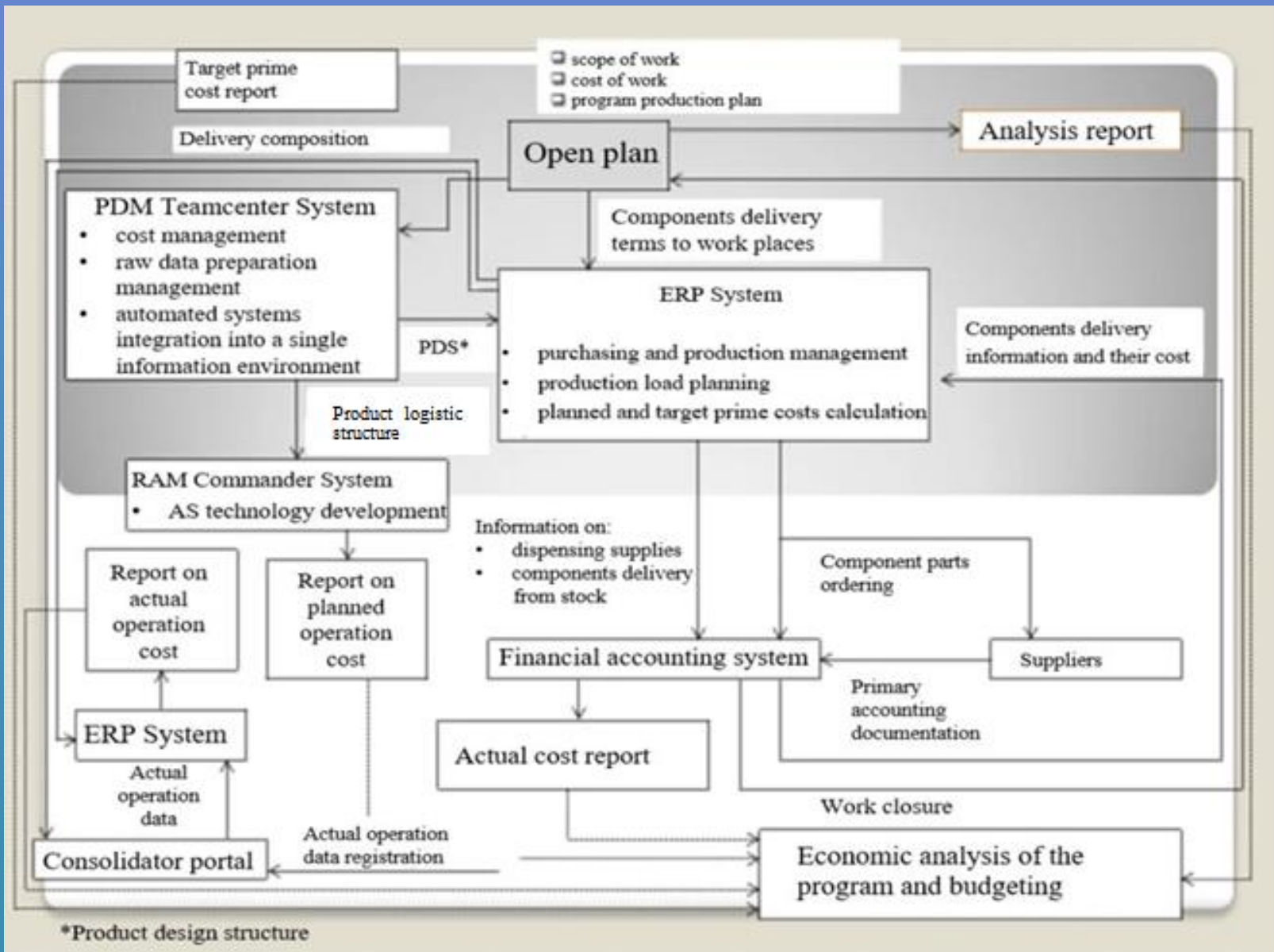
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One of the popular tools used to describe any economic system development process is the life cycle model, since effective company development management based on the life cycle model makes it possible to develop necessary transformations' optimal directions. In most cases, practical life cycle model application is fragmented. The inability to determine various stages duration of the life cycle and the entire life cycle as a whole does not allow the unambiguous life cycle stages identification and, as evaluation criterion, the entire life cycle cost determination, and not of individual performance indicators [1]. Thus, a reliable life cycle management system is needed which will increase competitiveness and ensure the aircraft project profitability by solving the following successive cost management tasks:

- non-recurring costs management, which include the costs of:
 - new aircraft designing;
 - production preparation;
 - prototype manufacturing;
 - testing and certification;
 - mass production development and change management;
 - design, production and after-sales services (AS) (basic production facilities construction investment, production equipment, etc.) modernization and development;
 - developers', manufacturers', service centers' and all enterprises' professional training (retraining) included in the cooperation on a new aircraft creation;
- recurring costs management at all life cycle stages associated with:
 - planned cost management at the design stage;
 - production costs management at the pilot and serial production stage;
- AS cost management during the operation phase;
- disposal cost management.



Aircraft life cycle management system architecture for solving cost management tasks

The aircraft life cycle management system study is aimed at new innovations formation based on the integration processes of various entities in the supply network and ensuring their autonomy based on effective management methods. This approach is a digital transformation in the study and understanding of a new technological structure, Industry 4.0. Methodological and practical study of the development problem and the possibility of using life cycle management systems create new effective areas for a comprehensive system assessment.

With such problem formulation, an effective material flow organization is possible only based on the applied technologies and equipment (production, logistics processes) deep knowledge, their technological unity and design methods compatibility. From this follows the urgent task of creating a new look and systems characteristics that will correspond to global changes taking place in the modern world, based on the Industry 4.0 principles, which will create the conditions for aircraft manufacturers and operators adaptation to a modern service-oriented approach using effective cost management tools at all product life cycle stages.

Thank you for your attention!