

## EXPERIENCE OF IMPLEMENTATION OF QUALITY MANAGEMENT SYSTEMS AT ENTERPRISES OF AEROSPACE COMPLEX

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**Abstract.** *The importance of the development of an effective quality management system of enterprises of aerospace complex is considered. Financial and economic issues, main innovations and challenges are discussed when implementing AS 9100S standard into quality management system of enterprises of aviation industry.*

**Keywords:** *the quality management system, aviation-aerospace complex.*

The establishment and development of effective quality management systems (QMS) of enterprises of aerospace complex are given a very serious attention from the customer and the government of the Russian Federation. The federal body of executive power provides organizing and coordinating the activities related to the improvement of QMS within its authority and the evaluation of their compliance with the requirements of the ISO 9000 family of standards and AS 9100 state military standards .

Financial-economic activity of the enterprises in the field of aerospace complex concerns following questions:

1) the data of availability of QMS on the enterprise and its compliance to the established requirements, which must be confirmed by the results of internal and external annual audits of the QMS.

2) the information on the implementation of activities related to improvement of the QMS.

3) activities to ensure the quality of products, including maintaining and improving the QMS conforming to the requirements of ISO 9000 family of standards and state military standards. Improving the quality and reducing the costs, eliminating several options of the same requirements are fundamental concept of AS 9100S standard in the aerospace industry. AS9100S standard made agreement on the requirements throughout the world, and a provider can now focus on the development of a unitary quality management system ac-

ceptable for all customers, thus reducing the amount of wasted efforts [1].

AS 9100S standard has introduced fundamentally new requirements in the management trends of product design in relation to enterprises' QMS of aviation, space and defense industries regarding not only to GOST R ISO 9001-2011, but also to GOST RV 15.002-2003 assuming the change of degree of influence on the product quality:

- change management of the production process. The results of the production processes need to be assessed to confirm that the desired effect is achieved without any negative impact on product quality at certification the QMS

- configuration management. The documented procedure of configuration management must be included into the QMS.

- additional requirements in the management of nonconforming product. The management process of the organization's nonconforming product should provide timely reporting of the delivered nonconforming product; parties which are required to notify about nonconforming products may include suppliers, internal organizations, consumers, distributors and regulatory authorities. Further use or repair of nonconforming product are permitted only after approval by an authorized representative of the organization responsible for its design.

The management teams of the largest Russian aviation industry corporations (JSC «Oboronprom», JSC «Russian Helicopters») made a political decision on implementation

requirements in the QMS of international standards of series AS 9100 [2].

JSC «Russian Helicopters» is a subsidiary company of JSC «Oboronprom», which is a part of State Corporation «Rostech», one of the world's leaders in the helicopter-building industry, the only developer and manufacturer of helicopters in Russia. To improve product quality, its competitiveness and conformance to the consumers' requirements, resulting in the holding company's sustainable development, it was decided improvement of the QMS of enterprises by introducing a corporate QMS, certified under AS 9100S standard. The Corporation's management team believes that the presence of the QMS meeting the requirements of AS 9100S standard (GOST R EN 9100-2011), is today an essential condition for developers and manufacturers of helicopter equipment, its components and materials [3].

For decades, aerospace suppliers were overloaded with specific customers' requirements, which often include multiple ways of development to achieve the goal. JSC "Russian helicopters" formed a quality management system on the basis of the standard permitting to effectively solve performance targets, namely, to make strategic plans and implement operational management for corrective and preventive actions.

The experience of implementing AS 9100S standard by «Russian Helicopters» identified the following problems:

1. the absence of sufficient experience in implementation of projects of providing the services for the development of QMS conforming to the requirements of AS 9100S;

2. the absence of promotion and distribution of requirements of the standard for learning;

3. the requirement to the availability of substantive documentation (at least, manual of quality and obligatory documented procedures) of the QMS in English; English-speaking experts and reporting to the Audit Committee;

4. the absence of an official Russian national standard in Russian;

5. access of foreign experts into an experimental design Bureau;

6. the availability of different translations and tractability of AS 9100S standard requirements.

Thus, an aerospace complex enterprise must plan and document changes that affect the production processes, production equipment, tooling or software not only in Russian but also in English. It is necessary to permit the access of foreign experts and to accelerate the release of AS 9100S as GOST R as well. The solution of these problems will allow companies to reach a new stage of development of aerospace complex.

### References

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**ОПЫТ ВНЕДРЕНИЯ СИСТЕМЫ МЕНЕДЖМЕНТА КАЧЕСТВА НА  
ПРЕДПРИЯТИЯХ АВИАЦИОННО-КОСМИЧЕСКОГО КОМПЛЕКСА**

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***Аннотация.** Рассматривается значимость развития эффективной системы менеджмента качества (СМК) предприятий авиационно-космического комплекса, финансово-хозяйственные вопросы, основные новации и проблемы при внедрении стандарта AS 9100С в СМК предприятий авиационной отрасли промышленности.*

***Ключевые слова:** система менеджмента качества, авиационно-космический комплекс.*