

## **The Quality Assurance for the Life Cycle Management of Defense Systems and Products as facilitators of national economic development**

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*The Life Cycle Management of Defense Systems and Products, a methodology adopted in several countries, takes into account, in an optimized and sustainable manner, the availability, performance, risks and costs throughout the life cycle. Among the same lines, the contribution of the Quality Management instruments has relevant convergence to the national economic agenda, with regard to the legal instruments of the Organization for Economic Cooperation and Development, contributing to the increase of fiscal sustainability, for efficiency in public spending and for economic stimulus to the Defense Industrial Base.*

*Palavras-chave: Life Cycle Management of Defense Systems and Products. Defense Policies. Quality management. Defense Industrial Base.*

## 1. Introduction

The Sectoral Defense Strategy (ESD, in Portuguese), derived from the National Defense Strategy (END, in Portuguese) and the National Defense Policy (PND, in Portuguese), provides a set of integrated actions aimed at: increasing support for foreign policy; improving governance and strategic management; stimulating scientific and technological development and innovation in the interest of defense; and making the budget compatible with the demands of the Defense Sector, in order to meet the needs of Brazilian society (BRASIL, 2020a).

In line with these guidelines, the Defense Systems Lifecycle Management (GCVSD, in Portuguese) aims to plan, obtain, maintain and optimize Defense military capabilities, considering performance, security, quality and cost throughout the entire Life Cycle (BRASIL, 2020b).

With regard to maintaining and optimizing the quality of a Defense capacity, Brasil (2020b) establishes the Industry Principle at GCVSD as a strategic relationship with the Industrial Defense Base (IBD), with the use of globally accepted practices and continuity provision of services that ensure the sustainability of military capabilities.

Brasil (2021a) demonstrates that in the last 10 years, the resources directed to National Defense had a relevant increase, jumping from R\$ 60 billion in 2010 to 112 billion in 2019. In the same period, the value of investment in Defense jumped from R\$8.2 to R\$15 billion.

Miranda (2020) highlighted the importance of using instruments that can slow the trajectory of rising costs of the Operation and Support phases of defense systems and products, in line with the reach of the reformist agenda in the political-economic field and to comply with the ESD, when pursuing not only the increase in revenue in the Defense Sector budget, but also the consolidation of measures that contribute to ensuring fiscal sustainability and strengthening the efficiency of public spending (OECD, 2020).

The framework adopted for the GCVSD, in this article, converges with international standards that permeate economic, financial and trade issues in the Ministries of Defense (MD) that take a seat in the North Atlantic Treaty Organization (NATO), also acting as another vector of support for foreign policy.

In line with the purposes of the ESD, in 2017, the Brazilian MD was accepted as a member of the Allied Committee 327 (AC/327), of the North Atlantic Treaty Alliance. Within that Committee, Brazil, through its MD, participates in Working Groups on Integrated Logistics Support, Life Cycle Cost Management and Quality Management, the latter being responsible

for proposing the necessary instruments for quality processes to be applied, collaboratively, in the procurements of Defense systems, services and equipment (NATO, 2009).

Among the same lines, the general objective of this article is to demonstrate the contribution of the management instruments of the GCVSD methodology, in the development of the national economic agenda, especially in the assistance to the END and the PND. Therefore, the use of quality management instruments applied to GCVSD will be analyzed, establishing as specific objectives: demonstrate the model used by MDs of countries belonging to NATO and OECD; identify gaps in current Defense Policies related to strengthening the IDB; and expose potential benefits for the development of the national economic agenda.

This research is justified for understanding that the consolidation of the GCVSD methodology, in the MD's priority projects (BRASIL, 2020d), is a critical success factor for achieving fiscal sustainability and the effectiveness of public spending (OECD, 2020), with support in meeting the required availability of a Defense System (DS), at the lowest cost.

Given the relevance of the topic, the following research problem was defined: How does the adoption of NATO's Quality Management instruments, in Defense procurements, contribute to filling gaps in public policies related to the strengthening of the IDB?

The article starts with the introduction. Then, the theoretical references will be presented, demonstrating aspects of different perspectives on the themes of GCVSD, Quality Management and Defense Policies. Finally, the last section will present the final conclusions.

## **2. Theoretical Background**

### **2.1. Defense Systems Life Cycle Management**

In the search of theoretical content about GCVSD; and in order to obtain, record and share the systematization experiences adopted in each Singular Force (SF), in 2020, the Good Practices Manual for GCSVD (BRASIL, 2020b) was approved as the result of a collaborative approach between the SF and considering, among others, the theoretical framework of AC/327.

In general, the Life Cycle is related to the temporal frame of events in a system or product. Moreover, the importance of studying it is in the management approach in the evolution of the relevant phases. Until the preparation of the Good Practices Manual, the aforementioned norms did not conceptualize Life Cycle Management, despite establishing responsible activities and bodies in GCVSD areas.

In this sense, GCVSD can be understood as the application of systematic and coordinated activities, through which an organization manages, in an optimized and sustainable manner,

its assets and their associated performance, risks and costs throughout its life cycle with the objective of achieving its strategic planning. (BRASIL, 2020b).

Among the standards used as a theoretical framework for the Manual, we can find the Allied Administrative Publication which are key publications in GCVSD and highlight the NATO concepts of systems, life cycle phases and processes used to implement GCVSD in defense programs and projects. Both are based on ISO/IEC 15228:2015, in order to dialogue more effectively with the BIDs (NATO, 2015; 2020).

## **2.2. Quality Management**

A Quality Management System (QMS) is defined as the set of interrelated or interactive elements of an organization to establish policies, objectives and processes to achieve these objectives (ABNT, 2015a).

ISO 9000:2015 not only represents the basis of Quality Management standards, policies, procedures and processes for MDs represented at NATO, but it is also an international standard aligned with industrial and commercial practices in various segments at home and abroad.

Ju et al (2016) demonstrate the importance of the existence of a specialized QMS in the area of Defense, using the ISO and NATO Quality standards, in the face of problems related to Quality Assurance in the use of South Korean DS and Defense Products (DP). The revision of its national standards was the first action to resolve such obstacles, in line with NATO publications on Quality Assurance. Furthermore, South Korea is an OECD member country.

Given the importance of Quality Management in the Defense context, especially because it's systems and equipment have a high percentage of reliability as a requirement, Roh and Seo (2017) defend the optimization of Quality Management at the governmental level and the advancement of the defense quality system through industrial practices.

## **2.3. Benefits of adopting Quality Management**

In addition to exploring previous research, assessing the impact of ISO 9001:2015 on developing economies in Asia from 2009 to 2012, Unido (2016) has demonstrated the empirical economic benefits perceived in the effective implementation and accredited certification of QMS based on ISO 9001:2015, when analyzing a survey carried out among national buyers (who widely use the standard as a basis for selecting their suppliers) and

certified organizations, where more than 98% consider that the investment in their QMS is satisfactory.

Participation in multilateral recognition agreements, under the coordination of the International Accreditation Forum (IAF), with the drive to ensuring the consistency of accreditations at the international level, catalyzes the flow of international trade by providing validity and recognition to accredited certification. In the same sense, the Governmental Quality Assurance (GQA) operates within the scope of the MDs belonging to NATO, facilitating the flow of defense goods and services between different countries.

Campbell (2016) exposed the results of another survey carried out in 122 countries, in which the two main reasons for the adoption of ISO 9001:2015 in organizations were answered, namely: the optimization of resource management, and customer requests, in line with the perspective of fiscal sustainability and efficiency in public spending demanded by the OECD in Brazil (OECD, 2020).

## **2.4 Quality Assurance**

It is worth mentioning the notion of Quality Assurance, a basic concept for NATO's policies, standards and procedures in the area of Quality Management as part of quality management focused on providing confidence that quality requirements will be met. (ABNT, 2015a).

Understanding that the cost associated with the risk of supplying a DS or DP, containing non-conformities with contractual requirements, is greater than the cost of including quality assurance in defense contracts, NATO signatory countries adopt as rule the Quality Assurance clause in DP and DS procurement contracts (NATO, 2019). It should also be considered the immeasurable value of the unavailability of a defense capacity, when required, after the investment of public resources for such purpose, and, in line with the legal instruments of the OECD, shown below.

While certification is the process by which recognition that defense companies' QMS is implemented, in accordance with the applicable quality requirements, GQA comprises all certification activities of such companies, in agreement with contractual quality requirements. and the contractual activities of the Government Quality Verification.

## **2.6 National Agenda: Defense Policies**

In terms of the National Agenda, Brazil seeks to consolidate its economic recovery and improve its governance vis-à-vis Brazilian society. In this pursuit, socioeconomic and

regional inequalities are found, in addition to economic, social, and institutional obstacles, as barriers to the growth of Brazilian productivity, which imposes the importance of the strategic alignment of various sectors of the State, in order to contribute to the advancement of the National Economic Agenda (BRASIL, 2021b).

Additionally, one of the objectives of the PND proposal (BRASIL, 2020e) is the promotion of technological and productive autonomy in the defense area, having as stated, in the fundamentals of the END, that the Defense Sector should stimulate the development of the industrial potentialities of the country, stimulating national economic growth.

As a result of this statement, the proposed END (BRASIL, 2020e) stipulates that defense projects should consider commonality and interoperability of defense systems and products as requirements. The END also establishes that the Defense Product Procurement Policy must observe this criterion, in order to rationalize the application of budgetary resources and ensure, in procurement decisions, the prevalence of the commitment to the development of national technological capabilities in products of defense.

In order to operationalize the Defense Policies aimed at fostering the IDB, the legislator approved Law No. 12,598/2012, providing for special rules for purchases, contracts, and the development of products and DS.

### **3. Methodology**

#### **3.1 Research Classification**

As for the general objective, this research is classified as an exploratory research, with the fulcrum of providing greater familiarity with the problem, making it more explicit, through a bibliographic review and analysis of examples that stimulate its understanding (GIL, 2008).

As every scientific research requires a bibliographical research (PRODANOV and FREITAS, 2013), norms, academic articles, legal-normative compendium, and national and foreign publications that are related to management instruments from GCVSD and Quality Management were consulted.

Based on documents that have not yet received analytical treatment, a documental research was also conducted (GIL, 2008), analyzing gaps to be developed based on the management instruments presented.

#### **3.2 Data Collection**

A documentary analysis of the legal-normative compendium resulting from the IDB's regulatory framework was conducted, as well as looking at how other countries added to

relevant international bodies, in terms of foreign policy, develop their Defense Policies in the area of GCVSD. Thereafter, convergences between the purposes of the legal instruments of the OECD and the execution of the GCVSD standards were found (Table 1), notably in the Quality Management applied to the Life Cycle, adopted by AC/327. It is also worth noting the relevant quantitative intersection of countries belonging to NATO and the OECD.

#### **4. Data Analysis**

##### **4.1 The gaps in the current legal and regulatory framework**

As a result of Law No. 12,598/2012, the MD created a normative framework, through Normative Ordinances (NO) related to the IDB, in line with the objectives of the END. They articulate strategic guidelines that are directly related to the management tools provided by GCVSD and applied by OECD member countries. The analysis contained in Table 2, in the Annex, was carried out, referring to the alignment with the GCVSD methodology, demonstrating gaps in the normative order related to the application of management instruments and the strengthening of the IDB, with the development of specific skills and increase in operational capacity.

The analysis carried out in Table 2, in the Annex, demonstrates that such gaps can be filled with the adoption of internationally accepted norms and standards and used by the participating MDs of the OECD and NATO, which adopt, in their Defense Policies, the aforementioned models, meeting the requirements of logistical interoperability of the SFs, meeting the good practices of systems engineering, process management, standardization of procedures, systems and materials between the SFs, optimizing resources; and the observation of good practices in the area of Quality.

##### **4.2 The AC/327 Reference Model for Quality Management**

###### **4.2.1 GCVSD's Quality Management Instruments**

Quality Management is an ongoing process and involves multiple stakeholders, including the IDB, supporting the development, delivery and logistical support of Defense capabilities, from the pre-conception phase to the dismantling of a DS (BRASIL, 2020b). In other words, the purpose is to obtain a DS that fully meets the requirements seen from a Life Cycle perspective, in order to optimize internal and external interfaces, and develop a strategic relationship with BID (NATO, 2009).

The elaboration and development of the GCVSD methodology was envisioned, within the scope of the MD and Forces, as a result of the MD's participation in the NATO Committee for GCVSD matters, when prospecting the business model, in which the NATO countries and other countries- AC/327 members adopt this methodology, through specific Defense Policies, effecting, by symmetry, the insertion of NATO norms and standards to their respective legal systems.

In fact, the aforementioned actions dialogue with the Brazilian economic agenda, notably in the coordinated efforts in various Ministries for the acceptance of Brazil as a member of the OECD, related to the improvement of macroeconomic policies and national governance (OECD, 2020).

It is worth mentioning that of the total of 37 member countries of the OECD, only Mexico and Chile are not part of NATO's strategic environment, not adopting the management rules of that Alliance in their Defense Policies.

NATO (2009) establishes that the Defense capacity depends, to a great extent, on the quality of the DS that have, in an integrated way, hardware, software, infrastructure, personnel and processes. The quality of DS is efficiently achieved through an integrated systems approach through Life Cycle Management.

#### **4.2.2 The Quality Management model used by NATO**

AC/327 was created to be the NATO Committee responsible for developing the GCVSD in procurement processes within the Alliance itself, considering Quality Management throughout the entire CV.

To this end, AC/327 is responsible for developing and maintaining NATO policies, methods, procedures and agreements related to Quality Management, in a collaborative manner, such as: (i) Quality Management requirements: quality management and good practices; (ii) Quality Assurance requirements: contractual requirements for quality assurance used in obtaining equipment and services; and (iii) GQA: procedures and guidance for the provision of mutual quality assurance among NATO countries to ensure multilateral collaboration when risk areas associated with the product or supplier are identified.

To meet the above requirements, NATO countries and partners involved in obtaining DS formally adopt STANAG 4107, ratified through their National Quality Assurance Authority (NQAA-National Quality Assurance Authority), which are sectors linked, organizationally, to the their MDs, whose objectives are: to support multinational collaboration through mutual



GQA between countries (Government Quality Assurance - GQA) and to increase interoperability through the use of AQAP (NATO Publications on Quality Assurance - Allied Quality Assurance Publications) in obtaining of products and DS.

It is worth mentioning that such requirements are not only used in multinational procurement of the Alliance but are also used in procurement of interest only to a NATO country, as they are explicit in their legal and regulatory framework.

In this sense, the collaborative aspect between the MDs belonging to NATO can be replicated among the national SFs, as it is a critical requirement for achieving interoperability in Multinational Operations (in that case) and Joint Operations (in the national case).

Based on the OECD collection, Table 1 shows the convergences between the GCVSD model and the OECD legal instruments, both used by countries that perform Quality Management, in their internal and external business environments, in procurement contracts executed by their MD.

Table 1 – Convergence between NATO Quality Management Standards and OECD Legal Instruments.

Norm	Summary of the NATO norm	OECD Legal Instrument
<b>STANAG 4107</b>	<i>Mutual Acceptance of Government Quality Assurance</i>  Agreement ratified by the MDs, whose objectives are to support multinational collaboration, through mutual GQA between governments; and support interoperability through the use of AQAPs to obtain defense products.	<i>Recommendation of the Council on OECD Legal Instruments Consumer Policy Decision Making (OECD/LEGAL/0403)</i> : proposes the adoption of measures that reduce the risk of delivering products and services that do not comply with the quality and performance requirements established by the customer, in this case, the government. Such legal instrument was adhered to by all member countries, including South Korea, which has a Quality Management System (QMS) specialized in the area of Defense (Ju et al, 2016; Roh and Seo, 2017). South Korea is not a NATO country, but it is a partner across the globe (NATO, 2021a).
<b>AQAP 4107</b>	<i>Mutual Acceptance of Government Quality Assurance and Usage of Allied Quality Assurance Publications</i>  Lists the standardized use of other AQAP standards related to the GQA process.	
<b>AQAP 2000</b>	<i>NATO Policy on an Integrated Systems Approach to Quality through the Life Cycle</i>  It is NATO's Quality Policy, in which the quality process is applied to the various processes of the stages of the Life Cycle (Design, Development, Production, Operation, Support and Undo) of DS, Products and Services. This Policy recognizes that quality management is an ongoing process that involves multiple participants, with the objective of acquiring products that will meet the requirements seen from a Life Cycle perspective.	<i>Recommendation of the Council on OECD Legal Instruments Public Integrity (OECD-LEGAL-0435)</i> : foresees, in public procurement, the use of quality assurance as an efficient instrument for the risk management system. Brazil still does not adopt such an instrument.
<b>AQAP 2070</b>	<i>NATO Mutual Government Quality Assurance (GQA) Process</i>  This AQAP contains the standardized procedures (how-to) for the development of the GQA.	<i>Recommendation of the Council on OECD Legal Instruments Fighting Bid Rigging in Public Procurement (OECD-LEGAL-0369)</i> : the aim is to shield the public procurement process from attacks against the public interest. Violation of the fairness of the process can result in the delivery of poor-quality products and services.  <i>Recommendation of the Council on OECD Legal Instruments Fighting Bid Rigging in Public Procurement (OECD-LEGAL-0411)</i> : In public procurement, whenever possible

<b>AQAP 2070</b>	<p><i>NATO Mutual Government Quality Assurance (GQA) Process.</i></p> <p>This AQAP contains the standardized procedures (how-to) for the development of the GQA.</p>	<p>consider the quality of the product as a criterion for selecting suppliers.</p>
<b>Outras AQAP</b>	<p>Contractual-type norms (should be included in procurement contracts), based on ISO norms and other standards accepted worldwide, with additional requirements established by NATO, with the objective of developing quality products; establish and use efficient processes; and avoid deficiencies, contributing to the reduction of quality risks and costs. They also require, from the supplier, objective evidence of the adoption of a QMS, based on the ISO 9001: 2015, ISO 9000: 2015 and ISO 19011: 2018 standards.</p>	<p><i>Recommendation of the Council on OECD Legal Instruments the Governance of Infrastructure (OECD-LEGAL-0460):</i> with regard to the interest of the person responsible for public procurement, suppliers must adopt practices to ensure the quality and reliability of products and services. Brazil still does not adopt such an instrument.</p> <p><i>Recommendation of the Council on OECD Legal Instruments Public Procurement (OECD-LEGAL-0411):</i> the instrument provides for standardization as a rule (whenever possible) to ensure a broad participation of suppliers. Brazil has not yet adopted this legal instrument.</p> <p><i>-OECD Guiding Principles for Regulatory Quality and Performance</i> provides general principles, recommending that regulations should follow quality standards.</p> <p><i>- Recommendation of the Council on OECD Legal Instruments Public Service Leadership and Capability (OECD/LEGAL/0445):</i> This instrument provides for the long-term proactive and strategic engagement of the public sector with other sectors of society, in order to establish quality standards and ensure that public policies and services meet the needs of society. Brazil still does not adopt this instrument.</p>

Source: Authors

#### 4.2.3 AQAP certification

NATO nations adopt the QMS certification of their companies, based on the ISO 9001:2015 standard, which is a condition for the AQAP certification by MDs, with additions to the requirements established in the AQAP standards, preparing these companies for future business between nations of the Alliance.

This certification contributes to the effectiveness of Quality Management, acting together with the adoption of the GQA and aims to encourage defense companies to comply with AQAP procedures in their processes and their QMS.

In Brazil, FAB, through the Institute for Development and Industrial Coordination (IFI), adopts AQAP standards in contracts for obtaining DS, such as the KC-390 and FX-2 Gripen NG Projects (IFI, 2021). For the Frigates Class Tamandaré (FCT) and the Antarctic Support Ship (NAPAnt, in Portuguese) projects, both MD priorities (BRASIL, 2020d), MB also considered the AQAP standards, which demonstrate the possibility of standardizing the adoption of the contractual clause of Quality Assurance in product and DS procurement.

#### **4.2.4 Benefits in the adoption of the Quality Management model by the MD and by the Special Forces**

In addition to the alignment with the legal instruments of the OECD, the adoption of the NATO Quality Management instruments, through a normative species equivalent to the current NO explored in Table 1, demonstrate the following benefits obtained by countries that already adopt such methodology:

- the possibility of requesting and receiving support from MDs of countries participating in NATO and the OECD, for the execution of the GQA, in defense companies, since Brazil would be able to adopt STANAG 4107, fulfilling the requirements of the legal instruments of the OECD;
- the adoption of internationally accepted and recognized norms and standards, both by MDs and by the IDBs of participating countries of NATO and the OECD, in contracting to obtain DS and DP, contributing to the achievement of fiscal sustainability, spending efficiency MD's priority projects and the IDB's increased participation in the international market, with the AQAP certification conducted by the MD;
- filling gaps in Defense Policies on standardization, observing good practices for quality management, exchanging information, developing specific skills and improving operational capacity between the MD and the IDB;
- the increase in interoperability, through the use of common contractual requirements; and
- the multiplier effect of QMS certification in companies belonging to the supply chains of defense companies, by adopting such contractual requirements, with subcontractors, in line with the AQAP.

#### **5. Conclusions**

We sought to answer how the adoption of NATO's Quality Management instruments in the Defense procurements contributes to fill public policy gaps related to strengthening the IDB.

Based on such questioning, the analysis carried out in Table 2, in the Annex, demonstrated how the GCVSD methodology can meet, among other demands, good practices in the area of

Quality, ensuring standardization and sharing of views among the Defense Sector and the IDB.

Nevertheless, in view of the analysis in Table 1, such adoption demonstrates the MD's contribution to the achievement of Brazil as an OECD member country, by providing instruments capable of contributing to the fulfillment of that Organization's legal instruments, such as the standards used by the countries NATO, with a focus on fiscal sustainability and spending efficiency, within the scope of priority projects of the MD.

Therefore, this article reached its general objective, by demonstrating the contribution of the management instruments of the GCVSD methodology in the development of the national economic agenda, especially in serving the END and the PND, analyzing the use of quality management instruments applied to the GCVSD, punctuating the model used by the MDs of countries belonging to NATO and the OECD, identifying gaps in current Defense Policies, related to the strengthening of the IDB, and exposing potential benefits for the country's economic development.

As a proposal for future research, it is suggested, as two other areas of knowledge prospecting in AC/327, from the perspective of GCVSD: (i) the analysis of the adoption of Life Cycle Costs instruments in defense projects and (ii) the evaluation of Integrated Logistic Support practices in defense projects in the SF (MIRANDA, 2020).

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## ANNEX

Table 2 – Analysis on the alignment of the GCVSD methodology with the Defense regulations

Defense Product Procurement Policy (NO n° 15/2018)	
Objective: to ensure that DP achievements are aligned with the national strategic interests set out in the END, the PND and the White Paper on National Defense.	
Strategic guidelines contained in the Policy	Alignment with GCVSD (author's emphasis)
Art. 10 - Procurement based on military capabilities.  III - encourage operational and logistical interoperability of the Armed Forces;	The principle of interoperability is one of the cornerstones of the GCVSD methodology and establishes that the MD and the SF must provide systems that satisfy the Military Capabilities and the interoperability provided for in the Capability Based Planning (PBC). <b>Brazil (2020b) defines that cooperation and interoperability must be achieved through the establishment, implementation, monitoring and improvement of GCVSD.</b> Furthermore, Brazil (2020b) demonstrates that the objective of GCVSD is to plan, obtain, maintain and optimize Defense Military Capabilities, <b>considering performance, safety, quality, and cost throughout the entire CV. Interoperability and standardization of processes in the Quality Management area will be achieved with the application of the GCVSD methodology in that area,</b> in line with the policy adopted by countries belonging to AC/327.
Art. 11 - <u>scope</u> of the system for obtaining DP.  III - carry out the selection of the DP, respecting the legislation in force and observing the good practices of risk management, quality control, tests and prior assessments, systems engineering, process and requirements management.	GCVSD activities can be organized in areas of knowledge that fulfill the demand for <b>observing good practices in risk management, systems engineering, process and requirements management, through the adoption of ISO / IEC 15288: 2015. In addition, quality control, testing and prior assessments must be included in GCVSD activities related to Quality Management.</b>
Art. 11 - <u>scope</u> of the system for obtaining DP.  IV, §1° - The standardization of concepts, doctrines, procedures, systems and materials between the Armed Forces should be encouraged when dealing with matters related to obtaining DP, intensifying the use of the concept of interoperability.	Despite filling gaps in the normative framework presented, the <b>Manual of Good Practices for the GCVSD is a different type of normative from the current norms in force on related topics. This manual was translated into the effort to standardize processes and activities of the GCVSD methodology between the MD and the SF, however, it did not specify details of the Quality Management processes.</b>

<p>DP and DS Joint Procurement Guidelines (NO n° 78/2019)</p>	
<p>Objective: to establish a joint analytical process for obtaining DP and DS within the scope of the Ministry of Defense and the Armed Forces, in view of the need to coordinate common projects, in addition to providing interoperability between the Armed Forces and the promotion of IDB</p>	
<p>Art. 4° IV - work with ICT, private law organizations, and IDB industries to enable exchange information, development of specific skills, and increase in operational capacity.</p>	<p>One of GCVSD's principles is the Industry Principle, which provides for the adoption of a collaborative aspect with the IDB, through the exploration of new technologies and sharing of strategic “expertise”, and <b>the use of civil norms and standards whenever possible. The best practice is to always use civil standards and make additional military requirements explicit in contract or in specific standards, such as NATO's STANAG. Ex: ISO 9001:2015 with additional requirements from NATO AQAP 2110 Ed. D. The project must be as civil as possible, as military as necessary (BRASIL, 2020b).</b></p>
<p>Art. 4° VIII - optimize the pertinent budgetary actions in order to enable the joint achievements of DP and DS.</p>	
<p>Guidelines for the Implementation of the Decision-Making Process for Strategic Projects of Interest to the MD (NO n° 99/2018)</p>	
<p>Objective: The purpose of the Directive is to establish the premises and guidelines for the implementation and execution of the Decision-Making Process that disciplines criteria and routines for the evaluation of new proposals for Strategic Projects of Interest to the Ministry of Defense.</p>	
<p>After receiving new proposals for Strategic Projects of interest to the MD, an analysis must be carried out from a logistical point of view.</p>	<p>The analysis of the adherence of the new proposal to the doctrine of the Life Cycle of Systems or Materials, aiming to verify if the project proposal meets what is recommended by the MD in terms of the Doctrine for the Life Cycle of Systems and Materials.          Currently, there is no Doctrine of the MD for the GCVSD, and the Manual of Good Practices is in force, through Normative Instruction.</p>

Source: Authors