NATO NORTH ATLANTIC COUNCIL
OTAN CONSEIL DE L'ATLANTIQUE NORD

NATO UNCLASSIFIED

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DOCUMENT
C-M(2002)49-COR11

SECURITY WITHIN THE NORTH ATLANTIC TREATY ORGANISATION

Corrigendum to C-M(2002)49 dated 17 June 2002
Amendment 11

1. This document is the result of a review of Enclosure "F" to C-M(2002)49 by the Security Committee and has been approved by Council[1] under the silence period.

2. The amendments concern changes to paragraph 13.4 of Enclosure "F" to C-M(2002)49 related to the role and responsibilities of the National Communications Security Authority. AC/35-WP(2014)0006 refers in this respect.

3. Accordingly, holders of C-M(2002)49 are requested to insert the attached revised Enclosure "F" and destroy the previous versions.

4. This amendment bears serial number 11. Holders of C-M(2002)49 are therefore requested to strike out number 11 on the "Record of Amendments" which can be found on the opposite side of the cover page.

[1] C-M(2014)0028-AS1 refers

Annex: Enclosure "F"

Action Officer: Robert Keil, NOS IPO 3, Ext. 4084

Original: English

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ENCLOSURE "F"

Communication and Information System Security

1. INTRODUCTION

1.1. This Enclosure sets out the policy and minimum standards for the protection of NATO classified information, and supporting system services and resources[1] in communication, information and other electronic systems storing, processing or transmitting NATO classified information.

1.2. This Enclosure supports the NATO Information Management Policy and complements the Policy on Management of Non-Classified NATO Information which addresses the basic principles and standards to be applied within NATO civil and military bodies and NATO member nations for the protection of non-classified NATO information.

1.3. Communication and Information System Security (CIS Security) is one of the elements of Information Assurance (Figure 1) and is defined as the application of security measures for the protection of communication, information and other electronic systems[2], and the information that is stored, processed or transmitted[3] in these systems with respect to confidentiality, integrity, availability, authentication and non-repudiation.

1.4. In order to achieve the security objectives of confidentiality, integrity, availability, authentication and non-repudiation[4] for classified information handled in these CIS, a balanced set of security measures (physical, personnel, information and CIS) shall be implemented to create a secure environment in which to operate a CIS. Where classified information is handled by industry in contracts, additional specific industrial security measures shall be applied in accordance with Enclosure G of this C-M and the supporting industrial security directive.

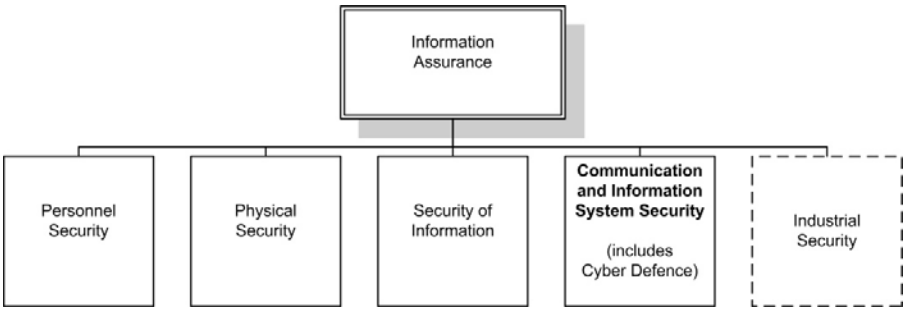

Figure 1 - Relationship between Information Assurance and CIS Security

1 Supporting System Services and Resources - those services and resources required to ensure that the security objectives of the CIS are achieved; to include, for example, cryptographic products and mechanisms, COMSEC materials, directory services, and environmental facilities and controls.

2 Hereafter referred to within this Enclosure as CIS.

3 Hereafter referred to within this Enclosure as handled.

4 Hereafter referred to within this Enclosure as Security Objectives

1.5. The "Primary Directive on CIS Security", which is published by the SC and the C3B in support of this policy, addresses the CIS Security activities in the CIS life-cycle, and the CIS Security responsibilities of committees, and NATO civil and military bodies. The "Primary Directive on CIS Security" is supported by directives addressing CIS Security management (including security risk management, security accreditation, security-related documentation, and security review / inspection) and CIS Security technical and implementation aspects (including computer and local area network (LAN) security, interconnection of networks security, cryptographic security, transmission security, and emission security).

2. SECURITY OBJECTIVES

2.1. To achieve adequate security protection of NATO classified information handled in CIS, a balanced set of security measures (physical, personnel, information and CIS) shall be identified and implemented to create a secure environment in which a CIS operates, and to meet the following security objectives:

(a) to ensure the confidentiality of information by controlling the disclosure of, and access to, NATO classified information, and supporting system services and resources;

(b) to ensure the integrity of NATO classified information, and supporting system services and resources;

(c) to ensure the availability of NATO classified information, and supporting system services and resources;

(d) to ensure the reliable identification and authentication of persons, devices and services accessing CIS handling NATO classified information; and

(e) to ensure appropriate non-repudiation for individuals and entities having processed the information.

2.2. NATO classified information and supporting system services and resources, shall be protected by a minimum set of measures aimed at ensuring general protection against commonly encountered problems (whether accidental or intentional) known to affect all systems and supporting system services and resources. Additional measures shall be taken, appropriate to the circumstances, where a security risk assessment has established that NATO classified information and/or supporting system services and resources are subject to increased risks from specific threats and vulnerabilities.

2.3. Independent of the security classification of the NATO information being handled, NATO security authorities shall assess the risks and the level of damage done to NATO if the measures to achieve the non-confidentiality security objectives fail. The minimum set of measures for non-confidentiality services shall be determined in accordance with directives supporting this policy.

3. SECURITY ACCREDITATION

3.1. The extent to which the security objectives are to be met, and the extent to which CIS Security measures are to be relied upon for the protection of NATO classified information and supporting system services and resources shall be determined during the process of establishing the security requirement. The security accreditation process shall determine that an adequate level of protection has been achieved, and is being maintained.

3.2. All CIS handling NATO classified information shall be subject to a security accreditation process, addressing the Security Objectives.

4. PERSONNEL SECURITY

4.1. Individuals authorised access to NATO classified information in any form shall be security cleared, where appropriate, taking account of their aggregate responsibility for achieving the Security Objectives of the information and the supporting system services and resources. This includes individuals who are authorised access to supporting system services and resources, or who are responsible for their protection, even if they are not authorised access to the information handled by the system.

5. PHYSICAL SECURITY

5.1. Areas in which NATO classified information is presented or handled using information technology, or where potential access to such information is possible, shall be established such that the aggregate requirement for the Security Objectives is met.

6. SECURITY of INFORMATION

6.1. All classified computer storage media shall be properly identified, stored and protected in a manner commensurate with the highest classification of the stored information.

6.2. NATO classified information recorded on re-usable computer storage media, shall only be erased in accordance with procedures approved by the appropriate security authority.

6.3. Approved security measures (confidentiality and non-confidentiality), implemented in accordance with directives supporting this policy, may be used to protect NATO classified information in computer storage media in such a manner as to reduce the physical security requirements commensurate with a lower classification level.

7. INDUSTRIAL SECURITY

7.1. A contractor facility used for contracts in which NATO classified information is handled on CIS shall be established to meet the aggregate requirement for the Security Objectives.

7.2. A consistent set of CIS security measures shall be described in contracts, Security Aspect Letters (SAL) and/or Project Security Instructions (PSI) and/or Service Level Agreements (SLA), as applicable, and be implemented by contractors to meet the NATO CIS security objectives and to protect NATO classified information and supporting services.

8. SECURITY MEASURES

8.1. For all CIS handling NATO classified information, a consistent set of security measures shall be applied to meet the Security Objectives to protect information and supporting system services and resources. The security measures shall include, where appropriate, the following:

(a) a means to provide sufficient information to be able to investigate a deliberate, accidental or attempted compromise of the security objectives of classified information and supporting system services and resources, commensurate with the damage that would be caused;

(b) a means to reliably identify and authenticate persons, devices and services authorised access. Information and material which controls access to a CIS shall be controlled and protected under arrangements commensurate with the information to which it may give access. On NATO CIS strong authentication mechanisms for persons shall be implemented;

(c) a means to control disclosure of, and access to, NATO classified information and supporting system services and resources, based upon the need-to-know principle;

(d) a means to verify the integrity and origin of NATO classified information, and supporting system services and resources;

(e) a means to maintain the integrity of NATO classified information and supporting system services and resources;

(f) a means to maintain the availability of NATO classified information and supporting system services and resources;

(g) a means to control the connection of CIS handling NATO classified information;

(h) a determination of the confidence to be placed in the protection mechanisms of CIS Security;

(i) a means to assess and verify the proper functioning of the protection mechanisms of CIS Security over the life-cycle of the CIS;

(j) a means to investigate user and CIS activity;

(k) a means to provide non-repudiation assurances that the sender of information is provided with proof of delivery and the recipient is provided proof of the sender's identity; and

(l) a means to protect stored NATO classified information where the physical security measures do not meet the minimum standards.

8.2. Security management mechanisms and procedures shall be in place to deter, prevent, detect, withstand, and recover from, the impacts of incidents affecting the Security Objectives of NATO classified information and supporting system services and resources, including the reporting of security incidents.

8.3. The security measures shall be managed and implemented in accordance with directives supporting this policy.

9. SECURITY RISK MANAGEMENT

9.1. CIS handling NATO classified information, in NATO civil and military bodies, shall be subject to security risk management, including security risk assessment, in accordance with the requirements of directives supporting this policy.

9.2. Security risk management of NATO CIS shall ensure continuous assessment of system vulnerabilities and security compliance and shall move towards dynamic risk management to be able to face effectively the challenges posed by today's complex operational scenarios and multifaceted threat environments.

10. ELECTROMAGNETIC TRANSMISSION [5] of NATO CLASSIFIED INFORMATION

10.1. When NATO classified information is transmitted electromagnetically, special measures shall be implemented to achieve the Security Objectives of such transmissions. NATO authorities shall determine the requirements for protecting transmissions from detection, interception or exploitation.

11. CRYPTOGRAPHIC SECURITY

11.1. When cryptographic products or mechanisms are required to provide confidentiality and non-confidentiality protection, whether during information transmission, processing or storage (data at rest), such products or mechanisms shall be specifically approved for the purpose and specific cryptographic requirements for physical, procedural and technical measures shall be implemented to achieve the required Security Objectives.

11.2. Data at rest shall be protected to a level adequate to the required Security Objectives, and, where cryptographic products and mechanisms are used, the requirements for cryptographic security shall be in accordance with the relevant NATO Technical and Implementation Directives.

11.3. During transmission, the confidentiality of information classified NS and above shall be protected by cryptographic products or mechanisms approved by the NATO Military Committee (NAMILCOM).

11.4. During transmission, the confidentiality of information classified NC or NR shall be protected by cryptographic products or mechanisms approved by either the NAMILCOM or a NATO member nation.

11.5. During transmission, the non-confidentiality requirements shall be assured in accordance with the communications system's operational requirement. The evaluation requirements and approval authority, for non-confidentiality mechanisms based on cryptography, shall be identified and agreed in conjunction with the specification of such mechanisms in the operational requirement, as agreed in technical directives.

[5] The term "electromagnetic transmission" covers transmission having both an electrical and magnetic character or properties, and includes, inter alia, visible light, radio waves, microwave, and infrared radiation.

11.6. Under exceptional operational circumstances, information classified NC and NS may be transmitted in clear text provided each occasion is properly reported to the higher authorities. The exceptional circumstances are as follows:

(a) during impending or actual crisis, conflict, or war situations; and

(b) when speed of delivery is of paramount importance, means of encryption are not available and it is assessed that the transmitted information cannot be exploited in time to adversely influence operations.

11.7. Under exceptional operational circumstances, when speed is of paramount importance, means of encryption are not available and it is assessed that the transmitted information cannot be exploited in time to adversely influence operations, information classified NR may be transmitted in clear text.

11.8. During transmission between NATO and non-NATO nations / International Organisations (NNN/IO) CIS, the confidentiality of information classified NS and above shall be protected by cryptographic products or mechanisms approved by the NATO Military Committee (NAMILCOM).

11.9. During transmission within NNN/IO CIS, the confidentiality of information classified NS and above shall be protected by cryptographic products or mechanisms approved by the NATO Military Committee (NAMILCOM).

11.10. Where the requirements of paragraphs 11.8 and 11.9 above cannot be met, NATO and an IO may reach agreement on the mutual acceptance of each others' evaluation, selection and approval processes for cryptographic products or mechanisms authorised for the protection in transmission of NS information or IO information of the equivalent classification level. The conditions for such acceptance are set out in paragraph 11.12 below.

11.11. In exceptional circumstances, in order to support specific operational requirements, and where the requirements of paragraphs 11.8 and 11.9 above cannot be met, NATO may agree the NNN's evaluation, selection and approval processes for cryptographic products or mechanisms authorised for the protection in transmission of NS information or NNN information of the equivalent classification level. The conditions for such agreement are set out in paragraph 11.12 below.

11.12. The following conditions are applicable in respect to the scenarios described at paragraphs 11.10 and 11.11 above:

(a) the NNN/IO shall have a Security Agreement with NATO and be certified by the NATO Office of Security (NOS) that they can appropriately protect released NATO classified information;

(b) each NNN/IO shall be treated on a case-by-case basis; and the basis of any acceptance / agreement shall be set out in the security arrangements supporting the Security Agreement between NATO and the NNN/IO;

(c) the terms of any such acceptance / agreement shall be approved by the NAMILCOM on the basis of an objective assessment carried out by the NOS, working in conjunction with the NAMILCOM Communications and Information Systems Security and Evaluation Agency (SECAN), the C3B Information Assurance and Cyber Defence Capability Panel and the NATO HQ C3 Staff, of the capability of the NNN/IO to perform cryptographic evaluations that meet requirements equivalent to those used within NATO for the cryptographic protection of NS information; and

(d) the NOS, in conjunction with SECAN and the NATO HQ C3 Staff, shall satisfy themselves, through verification and periodic re-verification, that the NNN/IO has in place appropriate structures, rules and procedures for the evaluation, selection, approval and control of cryptographic products and mechanisms, and that those structures, rules and procedures are being effectively and securely applied in practice.

11.13. Where acceptance / agreement is reached in accordance with the conditions set out in paragraph 11.12 above, the confidentiality of information classified NS may be protected by either cryptographic products or mechanisms approved by the NATO Military Committee (NAMILCOM) or cryptographic products or mechanisms approved by the NCSA (or equivalent authority) of the NNN/IO for the protection of the equivalent classification level.

11.14. During transmission between NATO and NNN/IO CIS and within NNN/IO CIS, the confidentiality of information classified NC or NR shall be protected by cryptographic products or mechanisms evaluated and approved by an appropriate authority. The appropriate authority may be the NAMILCOM, the NCSA of a NATO member nation or the equivalent authority of the NNN/IO, provided that the NNN/IO has appropriate structures, rules and procedures in place for the evaluation, selection, approval and control of such products or mechanisms, and that those structures, rules and procedures are being effectively and securely applied in practice. The structures, rules and procedures shall be agreed between the NAMILCOM and the NNN/IO.

11.15. The sensitive nature of the cryptomaterial used to protect NATO classified information necessitates the application of special security precautions beyond those required for the protection of other NATO classified information.

11.16. The protection which shall be afforded to cryptomaterial shall be commensurate with the damage that may be caused should that protection fail. There shall be positive means to assess and verify the protection and proper functioning of the cryptographic products and mechanisms, and the protection and control of cryptographic information (e.g. implementation details and associated documentation).

11.17. In recognition of the particular sensitivity of cryptographic information, special regulations and bodies shall exist within NATO and within each member nation to govern the receipt, control and dissemination of NATO cryptographic information to specially certified persons.

11.18. Special procedures shall also be followed which regulate the sharing of technical information, and which regulate the selection, production and procurement of cryptographic products and mechanisms.

12. EMISSION SECURITY

12.1. Security measures shall be implemented to protect against the compromise of information classified NC and above through unintentional electromagnetic emissions. The measures shall be commensurate with the risk of exploitation and the sensitivity of the information.

13. SPECIFIC CIS SECURITY RESPONSIBILITIES

13.1. NATO Military Committee (NAMILCOM)

13.1.1. The NAMILCOM's responsibilities on CIS Security include the security approval and release of cryptographic equipment and participating in the evaluation and selection of cryptographic products and mechanisms for standard NATO use. The four nationally manned agencies of the Military Committee (SECAN, DACAN, EUSEC and EUDAC) provide advice and support on CIS Security to the NAMILCOM, to the SC, to the C3B and, as appropriate, to their sub-structures, to member nations and to other NATO organisations.

13.2. C3 Board (C3B)

13.2.1. As the senior Consultation, Command and Control (C3) policy committee within the Alliance, the C3B supports the NAMILCOM and the NATO political authorities in their validation process for C3 capabilities and projects by reviewing operational C3 requirements. The C3B is responsible for the provision of secure and interoperable NATO-wide C3 systems. Staff support to the C3B is provided by the NATO HQ C3 Staff (NHQC3S).

13.3. NATO Cyber Defence Management Board (CDMB)

13.3.1 The CDMB is the cyber defence coordination body providing strategic planning and direction for the implementation of the Cyber Defence Policy and facilitating cooperation with Allies. The CDMB reports to and receive political guidance from the NAC through the Defence Policy and Planning Committee in reinforced format (DPPC(R)). The CDMB is supervised by Allies through the C3B on C3 policy and implementation aspects of cyber defence. CDMB consults on specific subject matters through the appropriate NATO committees.

13.4. National CIS Security Authority (NCSA)

13.4.1. Each NATO and non-NATO nation, where applicable to the latter, shall identify an NCSA, which may be established as an agency in the national security infrastructure. The NCSA is responsible for :

(a) controlling cryptographic technical information related to the protection of NATO information within their nation;

(b) ensuring that cryptographic systems, products and mechanisms for protecting NATO information are appropriately selected, operated and maintained;

(c) ensuring that CIS security products for protecting NATO information are appropriately selected, operated and maintained within their nation;

(d) communicating on NATO communications security and technical matters on CIS Security, both civil and military, with appropriate NATO and national bodies; and

(e) identifying a National TEMPEST Authority, as appropriate.

13.4.2. NCSAs work in co-ordination with their NSA(s).

13.5. **National Distribution Authority (NDA)**

13.5.1. Each NATO and non-NATO nation, where applicable to the latter, shall identify an NDA, which may be established as an agency in the national security infrastructure, which is responsible for the management of NATO cryptomaterial within their nation and shall ensure that appropriate procedures are enforced and channels established for the comprehensive accounting, secure handling, storage, distribution and destruction of all cryptomaterial.

13.5.2. NDAs work in co-ordination with their NSA(s).

13.6. **Security Accreditation Authority(s)**

13.6.1. Each NATO and non-NATO nation, where applicable to the latter, shall identify a security accreditation authority(s) which is responsible for the security accreditation of the following :

(a) national CIS handling NATO classified information; and

(b) NATO CIS operating within national bodies / organisations, as appropriate for non-NATO Nations.

13.6.2. Where a NATO civil or military body is established within a NATO nation, the NATO CIS shall be subject to security accreditation by a NATO SAA. In this case, the security accreditation may be co-ordinated with the appropriate national security accreditation authority.

13.7. **NATO Security Accreditation Authority (SAA)**

13.7.1. There are three NATO SAAs which are responsible for the security accreditation of NATO CIS handling NATO classified information. The SAA shall be the Director, NATO Office of Security and the Strategic Commanders, or their delegated / nominated representative(s), dependent upon the CIS to be accredited.

13.7.2. The NATO CIS Security Accreditation Board, composed of the NATO SAAs as identified in the paragraph above, shall have security accreditation oversight for all NATO CIS handling NATO classified information to ensure a corporate and consistent approach to security of NATO CIS. The NSAB Terms of Reference shall be subject to approval by the Security Committee.

13.8. **Security Authority for NNN**

13.8.1. The NNN shall appoint a security authority to be responsible for the security provisions of the present Enclosure and the oversight of the NNN Authorities with specific CIS Security responsibilities for national CIS handling NATO classified information (including NCSA, NDA and SAAs).