

NATO UNCLASSIFIED

Releasable to Interoperability Platform and Singapore

28 September 2021

WORKING PAPER
AC/225(DSS)WP(2021)0001

NATO ARMY ARMAMENTS GROUP (NAAG)

NAAG LAND CAPABILITY GROUP DISMOUNTED SOLDIER SYSTEM (LCGDSS)

REVISED TERMS OF REFERENCE

Note by the Secretary

Reference: AC/225-D(2021)0008-REV2, NAAG TOR

1. LCGDSS Chairmanship took the initiative for the development of a draft Terms of Reference (TOR) document for the agreement of the LCGDSS at their November 2021 Meeting.
2. This draft TOR takes the recently approved NAAG TOR (Ref) as the model, particularly for the applicable high-level issues.
3. The permanent LCGDSS Level 3 communities are included at the appendix, highlighting their specific mandate elements, and referring to the LCGDSS TOR for the commonly applicable issues.
4. This draft TOR is submitted to the attention of the LCGDSS as a Working Paper, for comments until the 19th LCGDSS meeting on 8 and 9 November 2021, where the Group agreement will be sought for its submission as a document to the NAAG approval.

(Signed) Osman Tasman

Action Officer: Mr Osman TASMAN, x4300
tasman.osman@hq.nato.int

Annex: 1

NATO UNCLASSIFIED

Releasable to Interoperability Platform and Singapore

ANNEX
AC/225(DSS)WP(2021)0001

**NATO ARMY ARMAMENTS GROUP (NAAG)
LAND CAPABILITY GROUP DISMOUNTED SOLDIER SYSTEMS (LCGDSS)
TERMS OF REFERENCE (TOR)**

1. AREA OF RESPONSIBILITY

1.1 Armaments cooperation within NATO¹ aims at supporting the Alliance's strategic objectives through the cost-effective development and acquisition of military capabilities, by enhancing and encouraging interoperability among Allies and, where appropriate, Partner countries, as well as promoting technological and industrial cooperation.

1.2 LCGDSS is a joint group under the NATO Army Armaments Group (NAAG), responsible for the system aspects and all equipment for the dismounted operations of Soldiers, Sailors, Airmen, Marines and Special Forces operators. The Dismounted Soldier is defined as those items and equipment that are worn, carried or consumed by the soldier and those items carried for individual or small team use. LCGDSS is responsible for Armaments Cooperation in the dismounted soldier domain, to support and contribute to NATO Capabilities, in particular the Materiel and Interoperability Lines of Capability Development, while supporting and being supported by the other Lines of Capability Development (DOTMLPFI).²

1.3 LCGDSS is also responsible for:

1.3.1 simulators and simulation techniques related to the training of dismounted units;

1.3.2 the interface of dismounted soldiers and mobility platforms;

1.3.3 dismounted soldiers related Battlefield Interoperability and contribution to the Federated Mission Networking (FMN) and;

1.3.4 the small calibre (up to 40mm) ammunition interchangeability for all force elements.

2. MISSION

2.1 LCGDSS facilitates the exchange of information among national dismounted system programs, develops an understanding of potential standardisation efforts and quantifies the benefits of interoperability between dismounted soldiers.

2.2 LCGDSS identifies and establish areas of standardisation that will enable collaborative development and provide increased capability on dismounted coalition operations.

2.3 LCGDSS responds to military requirements in its field as defined by the NATO Defence Planning Process (NDPP) and/or by NATO's Military Authorities; to tasks from the NAAG regarding NATO high-level initiatives and the NATO deployable and deployed forces. These tasks are expressed in the Land Armaments Management Plan (LAMP) and/or through direct taskings from NAAG.

¹ The North Atlantic Treaty (Washington D.C., 4 April 1949) Article 3: *"In order more effectively to achieve the objectives of this Treaty, the Parties, separately and jointly, by means of continuous and effective self - help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack"*

² DOTMLPFI: Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities, Interoperability.

NATO UNCLASSIFIED

Releasable to Interoperability Platform and Singapore

ANNEX

AC/225(DSS)WP(2021)0001

2.4 LCGDSS seeks to create synergy between the procurement, research and development, industrial and other related communities.

2.5 LCGDSS is the focal point of CNAD efforts in the area of small calibre ammunition interchangeability.

3. TASKS

3.1 Execute the NAAG-approved program of work as directed via the LAMP and advise the NAAG on systems and equipment aspects of dismounted operations.

3.2 Exchange information on relevant emerging technologies and lessons learned from operations, as well as information on national and Alliance requirements, concepts, research & development and acquisition programs relating to DSS, and related equipment, in order to harmonize requirements, establish common concepts and identify areas suitable for cooperative development.

3.3 Respond to NAAG tasks stemming from the high level initiatives such as the current Smart Defence, Innovation, Emerging and Disruptive Technologies (EDT), Accelerating and Achieving Capability Development and Delivery (A2CD2), Enhancing Multinational Cooperation in CNAD (EMC2), Women Peace and Security (WPS), and any other potential such initiatives, to include short term tasks.

3.4 Identify, harmonize and support NATO and National armaments activities to respond to the Alliance's capability requirements based on the NATO Defence Planning Process (NDPP) and additional requirements from NATO's Military Authorities, to include the needs of the NATO deployable and deployed forces (NATO Response Force - NRF, Very High Readiness Joint Task Force – VJTF, enhanced and tailored Forward Presence – eFP/tFP Battle Groups, and other such NATO deployments).

3.5 Pursue cooperative programs for the development and procurement of Land Capabilities and associated components, equipment and systems using mechanisms such as Smart Defence, A2CD2, EMC2, NATO Programme Management Framework (AAP-20), and other relevant multinational capability development efforts within NATO; recommend proposals to the Nations for bilateral or multilateral cooperation.

3.6 Develop and maintain standards and documentation related to national dismounted soldier systems, including hardware, weapons, ammunition, Battlefield Combat Identification (BCID), software and training.

3.7 Cooperate fully and maintain close liaison with the separate bodies of NAAG, the CNAD, the NATO Military Authority and other bodies of NATO, especially NIAG and STO that have related interests in dismounted soldier systems and equipment so that resources are complementary and duplication of effort is avoided.

3.8 Identify the implications, requirements and ways forward regarding the interface of dismounted soldiers and mobility platforms, in liaison where appropriate with groups responsible for battlefield tactical manoeuvre and air mobility.

3.9 Monitor the impact of other Lines of Capability Development (DOTLMPFI) on the systems and equipment aspects of dismounted operations.

3.10 Direct and monitor the work of its subordinate bodies, as appropriate.

NATO UNCLASSIFIED

4. COMPOSITION AND ORGANISATION

4.1 LCGDSS is a permanent official NAAG Level 2 Group. Its composition and organization is in accordance with the guidelines set out in the MAG Handbook³.

4.2 The LCGDSS Chairperson is elected by the LCGDSS from national candidates in accordance with the MAGs Handbook. National Vice-Chairpersons may also be elected in support of the Chairperson.

4.3 LCGDSS members are: the representatives of NATO and Partner nations (per paragraph 4.5), NATO Military Authorities, NATO International Military Staff including NATO Commands, NATO International Staff, representatives of relevant NATO liaison bodies, in particular the Science and Technology Organization and the NATO Industrial Advisory Group, NATO Standardization Office, and representatives of relevant NATO Agencies.

4.4 LCGDSS receives full administrative support from the International Staff (Defence Investment Division).

4.5 Currently, the activities of the LCGDSS are open to the Interoperability Platform (IP) and Singapore. The legacy LCGDSS documentation previously released to the former NAAG partnership programmes, i.e. Partnership for Peace (PfP) is releasable to IP and Singapore. Opening of LCGDSS activities to new Partner Nations is subject to approval by the appropriate NATO authority and i.a.w. current NATO policy guidelines as detailed in the MAGs Handbook.

4.5 LCGDSS may involve relevant non-NATO entities on a case-by-case basis in accordance with existing guidance and subject to approval by nations. Appropriate policy, security and technical pre-requisites apply.⁴

4.6 LCGDSS may hold NATO-only meetings and sessions, and conduct NATO-only work.

4.7 LCGDSS can propose to NAAG to hold meetings at 30+n with selected Partner Nations provided that it brings added value to its work. NAAG will seek further political approval through the CNAD, as appropriate, i.a.w. the "Policy for a More Efficient and Flexible Partnership" (PO(2011)0124).

4.8 LCGDSS may invite representatives from relevant industries to exchange information upon prior consent of the group.

4.9 LCGDSS directs and monitors the work of the following Level 3 groups as listed below:

- 4.9.1 Sub-Group 1 on Small Arms Ammunition Interchangeability (SG/1)
- 4.9.2 Sub Group on C4I and Soldier System Architecture (C4ISA)
- 4.9.3 Sub Group on Combat Clothing, Individual Equipment and Protection (CCIEP)
- 4.9.4 Sub-Group on Power
- 4.9.5 Sub Group on Soldier Capability Analysis (SCAG)
- 4.9.6 Sub-Group on Weapons and Sensors WSSG)

³ NATO Main Armaments Groups' (MAGs) Handbook, AC/225-N(2012)0010

⁴ C-M(2002)49; C-M(2002)50; C-M(2002)60

NATO UNCLASSIFIED

Releasable to Interoperability Platform and Singapore

ANNEX

AC/225(DSS)WP(2021)0001

4.10 The Appendix outlines the Areas of Responsibilities, Missions, and Specific Working Arrangements of the Level 3 Groups. As required, these groups may submit own TOR documents for approval of LCGDSS. In any case, they follow the general work principles of the LCGDSS.

4.11 LCGDSS may establish and disband informal Level 3 Groups, as required for furthering its mission (informal Sub-Groups, Ad-Hoc Groups, Teams of Experts, and/or Quick Reaction Teams).

5. METHOD OF WORK

5.1 LCGDSS reaches its decisions on the basis of consensus among the representatives of NATO member nations. As necessary LCGDSS submits these decisions to the NAAG endorsement.

5.2 LCGDSS normally meets twice per year, normally in Spring at the NATO HQ, and in Fall, elsewhere and in conjunction with the meetings of all subordinate groups. The approval of the appropriate NATO authority is sought for outside Brussels meetings. The Chair may call up to two additional meetings during any given calendar year, should this be deemed necessary.

5.3 The LCGDSS Chairperson provides oral reports to the NAAG at its regularly scheduled plenary meetings twice each year.

5.4 LCGDSS and its subordinate structure should work up to and including the classification NATO SECRET, but should use the lowest security classification appropriate.

5.5 LCGDSS follows the relevant procedures outlined in the MAG Handbook and by the NAAG.

NATO UNCLASSIFIED

Releasable to Interoperability Platform and Singapore

APPENDIX TO THE ANNEX
AC/225(DSS)WP(2021)0001

**AREAS OF RESPONSIBILITY, MISSIONS AND SPECIFIC WORKING
ARRANGEMENTS OF LCGDSS SUB-GROUPS**

1. SG/1 ON SMALL ARMS AMMUNITION INTERCHANGEABILITY

1.1 AREA OF RESPONSIBILITY

1.1.1 SG/1 is responsible for the standardisation of all technical aspects of Small and Cannon Calibre Ammunition (up to and including 40 mm and the ancillary items such as links, clips, magazines, bandoliers, boxes, etc.)

1.2 MISSION

1.2.1 SG/1's mission is to improve NATO Small and Cannon Calibre Ammunition interchangeability capabilities. Principally, this will be achieved through information exchange on national activities, the pursuit of standardisation and the identification/promotion of multilateral and bilateral cooperative activities with the support of the NATO Certified Test Centres.

1.2.2 SG/1 provides the technical expertise necessary to accomplish and maintain battlefield interchangeability in the areas of Small and Cannon Calibre Ammunition through direct evidence testing at NATO Certified Test Centres.

1.2.3 Under authority of LCGDSS, SG/1 monitors and guides the activities of both the NATO North American and European Regional Test Centres (NARTC, ERTC). The work of the NATO Regional Test Centres would not be possible without support from the United Kingdom and United States who agree to provide the funding to staff, manage, equip and maintain these vital international test centres. The United Kingdom and United States also provide independent technical experts for the role of NATO Regional Test Centre Superintendents and NATO Proof Officers / Test Directors whose roles are separate and distinct from their national delegates.

1.2.4 SG/1 achieves and maintains the interchangeability of ammunition and ancillary items by conducting tests at NATO Regional Test Centres and certified National Test Centres, using standardized test procedures and equipment.

1.2.5 Under authority of LCGDSS, SG/1 authorizes and controls the use of the NATO Symbols of Interchangeability of all ammunition and ancillary items bearing those symbols.

1.3. SPECIFIC WORKING ARRANGEMENTS

1.3.1 SG/1 is open to those partner nations invited to LCGDSS, as well as appropriate industry representatives proposed by their nations and not objected to by any NATO nation. SG/1 holds NATO-only and/or government-only sessions in its meetings as appropriate.

1.3.2 With the LCGDSS agreement, SG/1 may form informal teams to further its work programme.

1.3.3 SG/1 normally meets for two days twice a year at NATO Headquarters and/or other locations as announced. One of these meetings will be in conjunction with the meetings of LCGDSS and other LCGDSS subordinate groups.

1.3.4 The SG/1 Chair and Vice-Chair persons are elected by group members, and endorsed by LCGDSS. The Chairperson reports to the LCGDSS at its regularly scheduled meetings.

1.3.5 The LCGDSS Terms of Reference (the main document) is to be referred for issues not addressed in this Appendix.

NATO UNCLASSIFIED

Releasable to Interoperability Platform and Singapore

APPENDIX TO THE ANNEX
AC/225(DSS)WP(2021)0001

2. SG on C4I AND SOLDIER SYSTEM ARCHITECTURE (C4ISA)

2.1 AREA OF RESPONSIBILITY

2.1.1 The Command, Control, Communications, Computer, Intelligence and Soldier System Architecture (C4ISA) Sub-Group is responsible for identifying and maintaining interoperability between soldier systems and between soldier systems and tactical vehicles. C4ISA addresses issues related to digitization and the ability to transfer battlefield information between soldiers and dismounted operations of nations. These may also include plugs, connectors and electrical and data exchange protocols. The scope of the C4ISA is a key component of the NATO Federated Mission Networking (FMN).

2.1.2 C4ISA is also responsible for development of Soldier System Architecture standards to allow effective and efficient interactions of different system elements within this architecture.

2.2 MISSION

2.2.1 C4ISA's mission is to improve NATO Dismounted Soldier C4I capabilities, as well as to develop a system architecture standard within which the different elements of the soldier system are synchronized.

2.2.2 C4ISA provides the technical expertise necessary to accomplish and maintain battlefield interoperability of soldiers, including interoperability with other force elements. C4ISA standardizes the soldier C4I and situational awareness standards and proposes them for inclusion in the NATO Federated Mission Networking (FMN).

2.2.3 C4ISA provides the necessary architecture standard to allow the soldier system and its sub-systems operate in a synchronized manner.

2.2.4 C4ISA organizes and/or participates in the appropriate exercises, test events and demonstrations to further develop and facilitate implementation of the C4ISA standards.

2.3. SPECIFIC WORKING ARRANGEMENTS

2.3.1 C4ISA is open to those partner nations invited to LCGDSS, as well as appropriate industry representatives proposed by their nations and not objected to by any NATO nation. C4ISA holds NATO-only and/or government-only sessions in its meetings as appropriate.

2.3.2 With the LCGDSS agreement, C4ISA may form informal teams to further its work programme.

2.3.3 C4ISA normally meets for two days twice a year at NATO Headquarters and/or other locations as announced. One of these meetings will be in conjunction with the meetings of LCGDSS and other LCGDSS subordinate groups.

2.3.4 The C4ISA Chair and Vice-Chair persons are elected by group members, and endorsed by LCGDSS. The Chairperson reports to the LCGDSS at its regularly scheduled meetings.

2.3.5 The LCGDSS Terms of Reference (the main document) is to be referred for issues not addressed in this Appendix.

NATO UNCLASSIFIED

Releasable to Interoperability Platform and Singapore

APPENDIX TO THE ANNEX
AC/225(DSS)WP(2021)0001

3. SG on COMBAT CLOTHING, INDIVIDUAL EQUIPMENT, PROTECTION (CCIEP)

3.1 AREA OF RESPONSIBILITY

3.1.1 The Combat Clothing, Individual Equipment, Protection (CCIEP) Sub-Group is responsible for all issues related to the combat clothing, individual equipment and protective equipment of dismounted soldier systems. The scope of CCIEP is a key component of Integrated Personal Protection.

3.2 MISSION

3.2.1 CCIEP's mission is to improve NATO Dismounted Soldier survivability, sustainability and mobility capabilities, through information exchange, standardization and cooperation in the combat clothing, individual equipment and protection domains.

3.2.2 CCIEP provides the technical expertise necessary to the clothing and protection of soldiers, to include the individual equipment and Head-Borne Systems.

3.2.3 CCIEP standards consider the requirements of all soldiers, of different anthropometric characteristics, to include gender. As such, CCIEP supports the NATO's Women, Peace and Security Initiative.

3.3. SPECIFIC WORKING ARRANGEMENTS

3.3.1 CCIEP is open to those partner nations invited to LCGDSS, as well as appropriate industry representatives proposed by their nations and not objected to by any NATO nation. CCIEP holds NATO-only and/or government-only sessions in its meetings as appropriate.

3.3.2 With the LCGDSS agreement, CCIEP may form informal teams to further its work programme.

3.3.3 CCIEP normally meets for two days twice a year at NATO Headquarters and/or other locations as announced. One of these meetings will be in conjunction with the meetings of LCGDSS and other LCGDSS subordinate groups.

3.3.4 The CCIEP Chair and Vice-Chair persons are elected by group members, and endorsed by LCGDSS. The Chairperson reports to the LCGDSS at its regularly scheduled meetings.

3.3.5 The LCGDSS Terms of Reference (the main document) is to be referred for issues not addressed in this Appendix.

4. SG on POWER (POWER)

4.1 AREA OF RESPONSIBILITY

4.1.1 The Power Sub-Group (POWER) is responsible for the expeditionary power solutions intended for the most austere operating environments. These solutions include Soldier power generation systems, power scavenging, renewable energy, power distribution, power management, and power storage solutions that are lightweight, and Soldier portable/wearable, as a component of the Dismounted Soldier Architecture.

4.1.3 POWER also addresses the power connectors – as necessary also taking into consideration the data connection, as well as the requirements for power charging and discharging of batteries.

4.2 MISSION

4.2.1 POWER's mission is to improve NATO Dismounted Soldier capabilities, through efficient, lightweight and interoperable power supply solutions.

4.2.2 POWER provides the technical expertise necessary to the powering of the soldier system, to include the individual equipment.

4.2.3 POWER standardizes the power distribution within and outside of the soldier system with common connectors.

4.2.4 POWER develops innovative solutions for power centralization, scavenging, collection and generation.

4.2.5 POWER provides standards charging and discharging of soldier power sources.

4.3. SPECIFIC WORKING ARRANGEMENTS

4.3.1 POWER is open to those partner nations invited to LCGDSS, as well as appropriate industry representatives proposed by their nations and not objected to by any NATO nation. POWER holds NATO-only and/or government-only sessions in its meetings as appropriate.

4.3.2 With the LCGDSS agreement, POWER may form informal teams to further its work programme.

4.3.3 POWER normally meets for two days twice a year at NATO Headquarters and/or other locations as announced. One of these meetings will be in conjunction with the meetings of LCGDSS and other LCGDSS subordinate groups.

4.3.4 The POWER Chair and Vice-Chair persons are elected by group members, and endorsed by LCGDSS. The Chairperson reports to the LCGDSS at its regularly scheduled meetings.

4.3.5 The LCGDSS Terms of Reference (the main document) is to be referred for issues not addressed in this Appendix.

5. SG on SOLDIER CAPABILITY ANALYSIS (SCAG)

5.1 AREA OF RESPONSIBILITY

5.1.1 The Sub-Group on Soldier Capability Analysis (SCAG) assesses the operational needs of coalition tactical dismounted forces and guides and makes recommendations to the LCGDSS plenary and the subordinate groups' work. The group also provides the operational basis and rationale for the work of LCGDSS. This work is carried out using a combination of expert military judgment, research and analysis to provide advice and guidance, support directed tasks and identify Soldier System capability requirements.

5.1.2 SCAG is responsible for the analysis of the NATO Defence Planning Process (NDPP) input and of other relevant top-down guidance to draft the necessary guidance to the LCGDSS structure.

5.1.3 SCAG addresses the overarching soldier system issues (e.g. soldier burden, human systems integration) and develops solutions and standards, as well as providing recommendation to LCGDSS for the issuance of appropriate tasking to other LCGDSS sub-groups.

5.2 MISSION

5.2.1 SCAG's mission is to analyse and document the overarching characteristics of the soldier system, in order to propose the necessary work distribution within the LCGDSS structure.

5.2.2 SCAG conducts analysis of the NDPP and other top-down guidance, and proposes necessary LCGDSS actions, as well as preparing the LCGDSS expert-level contributions.

5.2.3 SCAG documents the soldier requirements and provides the necessary common scenarios and vignettes for the LCGDSS lines of efforts.

5.2.4 SCAG addresses the Soldier Burden issues (physical, psychological and cognitive) and develops solutions and standards.

5.2.4 SCAG addresses the Human Systems Integration matters, also considering the different human aspects (eg. anthropometry, gender, psychological, cultural, etc..).

5.2.5 SCAG addresses the testing and training systems and standardizes them as possible and appropriate.

5.3. SPECIFIC WORKING ARRANGEMENTS

5.3.1 SCAG is open to those partner nations invited to LCGDSS. SCAG holds NATO-only and/or government-only sessions in its meetings as appropriate

5.3.2 With the LCGDSS agreement, SCAG may form informal teams to further its work programme.

5.3.3 SCAG normally meets for two days twice a year at NATO Headquarters and/or other locations as announced. One of these meetings will be in conjunction with the meetings of LCGDSS and other LCGDSS subordinate groups.

5.3.4 The SCAG Chair and Vice-Chair persons are elected by group members, and endorsed by LCGDSS. The Chairperson reports to the LCGDSS at its regularly scheduled meetings.

5.3.5 The LCGDSS Terms of Reference (the main document) is to be referred for issues not addressed in this Appendix.

NATO UNCLASSIFIED

Releasable to Interoperability Platform and Singapore

APPENDIX TO THE ANNEX
AC/225(DSS)WP(2021)0001

6. SG on WEAPONS AND SENSORS (WSSG)

6.1 AREA OF RESPONSIBILITY

6.1.1 The Sub-Group on Weapons and Sensors (WSSG) is responsible for all issues related to dismounted soldier's weapon systems, grenades and shoulder launched and guided anti-tank weapons, as well as dedicated sensors including, but not limited to day and night sights, laser designators, tactical lights and fire control systems. The weapon system includes the weapon itself, different types of ammunition and the dedicated accessories.

6.1.2 WSSG is also responsible for the interface of the weapons and sensors with the various other parts of the soldier system and relevant Combat ID related Standards.

6.2 MISSION

6.2.1 WSSG's mission is to improve NATO Dismounted Soldier lethality capabilities, through information exchange, cooperation, and standardization in the field of soldier weapons and sensors, and their accessories.

6.2.2 WSSG provides the technical expertise necessary to the weapon and sensors

6.2.3 WSSG addresses the weight, functionality, practicality and stealth of the soldier weapons and sensors, and their accessories, as well as their effective interactions within the soldier system.

6.2.4 WSSG standardizes the test procedures and acceptance criteria for soldier weapons, sensors and their accessories.

6.3. SPECIFIC WORKING ARRANGEMENTS

6.3.1 WSSG is open to those partner nations invited to LCGDSS, as well as appropriate industry representatives proposed by their nations and not objected to by any NATO nation. WSSG holds NATO-only and/or government-only sessions in its meetings as appropriate.

6.3.2 With the LCGDSS agreement, WSSG may form informal teams to further its work programme.

6.3.3 WSSG normally meets for two days twice a year at NATO Headquarters and/or other locations as announced. One of these meetings will be in conjunction with the meetings of LCGDSS and other LCGDSS subordinate groups.

6.3.4 The WSSG Chair and Vice-Chair persons are elected by group members, and endorsed by LCGDSS. The Chairperson reports to the LCGDSS at its regularly scheduled meetings.

6.3.5 The LCGDSS Terms of Reference (the main document) is to be referred for issues not addressed in this Appendix.