UAB Management Report (Intermediate)

D 7.2

31.03.2023

NIGHTINGALE

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 101021957

DOCUMENT SUMMARY INFORMATION

Grant Agreement No	101021957	Acronym	NIGHTINGALE
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Deliverable	UAB Management Report (Intermediate)		
Work Package	7		
Deliverable type	Report	Dissemination Level	Public
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Lead Beneficiary	ESTES		
Authors	Roberto Faccincani		
Co-authors	Itamar Ashkenazi, Manuela Walland		
Reviewers	UPO-CRIMEDIM/MININT		
Security Assessment	☐ Passed	☐ Rejected	☒ Not Required
Status	☐ Draft	☒ Peer Reviewed	☒ Coordinator Accepted

DISCLAIMER

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HISTORY OF CHANGES

Version	Date	Changes
0.1	20/11/2022	Initial version
0.2	15/01/2023	First draft
0.3	26/01/2023	Second draft
0.4	29/01/2023	Third draft
0.5	06/02/2023	Fourth draft
0.6	20/02/2023	Fifth draft
0.7	28/02/2023	Sixth draft and incorporation of internal reviewer's feedback
1.0	30/03/2023	Coordinator's Review and Final Version

PROJECT PARTNERS

No.	Logo	Partner	Short name	Country
1		INSTITUTE OF COMMUNICATION AND COMPUTER SYSTEMS	ICCS	Greece
2		TOTALFORSVARETS FORSKNINGSINSTITUT	FOI	Sweden
3		LEONARDO – SOCIETA PER AZIONI	LDO	Italy
4		C4CONTROLS LTD *[TERMINATED]*	C4C *[TERMINATED]*	UK *[TERMINATED]*
5		NETCOMPANY-INTRASOFT	INTRA	Luxembourg
6		INOV INSTITUTO DE ENGENHARIA DE SISTEMAS E COMPUTADORES, INOVACAO	INOV	Portugal
7		EXUS SOFTWARE MONOPROSOPI ETAIRIA PERIORISMENIS EVTHINIS	EXUS	Greece
8		UNIVERSITAT POLITECNICA DE VALENCIA	UPV	Spain
9		ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS	CERTH	Greece
10		DEVERYWARE	DW	France
11		PARTICLE SUMMARY	PARTICLE	Portugal
12		TREE TECHNOLOGY SA	TREE	Spain
13		EUROPAISCHE GESENLLSCHAFT FUR TRAUMA -UND AKUTCHIRURGIE - ESTES	ESTES	Austria
14		INTERNATIONAL MRMID ASSOSIATION	MRMID	Sweden
15		UNIVERSITA DEGLI STUDI DEL PIEMONTE ORIENTALE AMEDEO AVOGADRO	UPO	Italy
16		ASSISTANCE PUBLIQUE HOPITAUX DE PARIS	APHP-SAMU	France
17		UNIVERSITA CATTOLICA DEL SACRO CUORE	UCSC	Italy
18		MINISTERO DELL' INTERNO	MININT	Italy
19		AZIENDA SANITARIA LOCALE N 2 SAVONESE	ASL2	Italy
20		MAGEN DAVID ADOM IN ISRAEL	MDA	Israel
21		CARR COMMUNICATIONS LIMITED	CCL	Ireland
22		ASSOCIAZIONE CITTADINANZATTIVA ONLUS	CA	Italy
23		INTERDISCIPLINARY CENTER (IDC) HERZLIYA	IDC	Israel
24		ASTRIAL GmbH	ASTRIAL	Germany

LIST OF ABBREVIATIONS

Abbreviation	Definition
UAB	User Advisory Board
MCI	Mass Casualty Incident
EC	European Commission
KPI	Key Performance Indicator
SOP	Standard Operating Procedures
RT	Round Table
TTX	Table Top Exercise
FSX	Full Scale Exercise
D	Deliverable

Executive Summary

NIGHTINGALE User Partners and User Advisory Board Members (UAB) form the User Assembly: a group of active/experts first responders in Mass Casualty Incidents (MCI)/disasters management. The User Assembly includes individuals that are potential end-users of the NIGHTINGALE novel integrated toolkit for emergency response (NIT_MR).

The overall aim of the User Assembly is to to advise, assist and support the NIGHTINGALE Partners in developing such novel integrated toolkit for emergency response (NIT-MR), in compliance with the project milestones and in line with its objectives.
To fulfil this task, the User Assembly has the following responsibilities:

1) attend regularly assigned User meetings to review Work Product status reports
2) provide expert opinion to Work Product teams to achieve their objectives
3) facilitate cooperation and communication between Work Product partners and between partners and the NIGHTINGALE coordinators
4) offer recommendations for program improvement
5) assist the program in setting priorities, including participating in ongoing planning activities of the program
6) participate in project events to evaluate/validate Work Product outputs

This document presents how the User Assembly has been formed, how it works and what are the main activities it carried out so far.

Table of Contents

1 User Assembly: Users and User Advisory Board

In NIGHTINGALE, the term "users" indicates the first responders to an MCI/disaster, medical and non-medical, including immediate responders (citizens). In practice, NIGHTINGALE users are organizations of first responders (Professional Associations, Scientific Societies, Academic Centres…) that are:
- formally beneficiaries of the project: **User Partners**
- non-Partners: organizations that were invited to participate in the project voluntarily because of their expert knowledge of the NIGHTINGALE topic: management of victims of Mass Casualty Incidents (MCI) and disasters; representatives of these last organizations form the NIGHTINGALE **User Advisory Board (UAB).**

Representatives of both Partner and non-Partner user organizations form the NIGHTINGALE User Assembly. User Partners are project beneficiaries, so participation in the Assembly activities is in the interest of their organizations and the whole consortium.

The UAB gathers experts in the field of MCI/disaster management, including health Authorities, operational first responders (FRs), academic researchers and members of the professional scientific societies.

Members of the UAB are volunteers: their participation is encouraged in any way they can on behalf of the project. The UAB members are a rich source of knowledge, and they offer their experience to the project. Since they are not associated economically with the consortium, their reviews provide quality assurance and an external assessment of the project work products.

UPO-CRIMEDIM is the coordinator of the User Assembly and works in close contact and synergy with ESTES (European Society of Trauma and Emergency Surgery), the UAB coordinator.

1.1 UAB coordinator: ESTES

The inaugural UAB members were selected from an already existing community established by the Disaster Medicine Round Table on the occasion of the ESTES annal congress held in Oslo in 2020. The activity aimed to group individuals and representatives of organizations assembled by ESTES' Disaster and Military Surgery Section to provide their knowledge and experience on mass casualty incident management and triage in disasters. Unfortunately, the meeting was cancelled due to Covid19 travel restrictions. **Annex 1: the Disaster Medicine Oslo Round Table**

With the implementation of the NIGHTINGALE project, these individuals and organizations were invited by ESTES to be part of the UAB together with other official NIGHTINGALE partners (UPO-CRIMEDIM, MRMI&D). **Annex 2: the UAB members on October 01, 2021**

Since its creation, only some changes have been made in the UAB's composition, mainly personnel representing individual organizations. At the time of writing this deliverable, this is the composition of the UAB. **Annex 3: the UAB members in November 2022**

As the UAB resulted from the Disaster and Military Surgery Section initiative of the Disaster Medicine Round Table, ESTES took it upon itself to coordinate the UAB. The Disaster and Military Surgery Section is one of five sections of ESTES (the others being Emergency Surgery, Polytrauma, Skeletal Trauma & Sports Medicine, and Visceral Trauma). The Disaster and Military Surgery Section's primary purpose is to improve care and share knowledge regarding disaster and military medicine. It is a unique platform within Europe where the different actors responsible for the care of the victims of MCI and disasters meet and share their knowledge and experience. It includes representatives from diverse origins: civilians, military, prehospital, in-hospital, medics, and non-medics.

The Disaster and Military Surgery Section strongly supports ESTES activities in NIGHTINGALE, and eight members actively participate in the project's everyday work (ESTES NIGHTINGALE committee). ESTES governance for NIGHTINGALE also includes the society's Vice-President, Treasurer, General Secretary, Head Administrator, and the Editor in Chief of the Society's journal, the European Journal of Trauma and Emergency Surgery. **Annex 4: ESTES governance in NIGHTINGALE**

ESTES NIGHTINGALE committee periodically meets to follow the project’s implementation.

2 NIGHTINGALE User Assembly Bylaws

The NIGHTINGALE User Assembly Bylaws document provides the protocols for the administration and guidance function of the NIGHTINGALE Users Assembly. The document defines the objectives of the Assembly, its organizational structure, rules, and regulations for the participation of the members in the project activities. **Annex 5: the NIGHTINGALE Practitioners Management and Advisory Board Chart**

3 NIGHTINGALE User Assembly activities

Regular User Monthly Telcos

The first meeting of the User Assembly was held virtually on the 29th of September 2021, before the Kick-off of the NIGHTINGALE project. Twenty-two users participated, and three were excused after they handed in justifications for their inability to attend. Representatives of the Project Coordinator (ICCS) and the Technical Coordinator (ASTRIAL) also participated. This inaugural meeting provided an opportunity to present the NIGHTINGALE project to the user Partners and Advisory Board members. **Annex 6: minutes of the 1st User Meeting**.
Since then, regularly-held web user meetings have been organized every month.

Physical Meetings and Workshops

Athens Kick-Off meeting

On **October 26-27, 2021**, the Project Coordinator ICCS organized the **project's Kick-Off meeting** in Athens. It was a hybrid meeting (physical/virtual) that allowed all the partners to participate, although Covid 19 restrictions on traveling were still present in many EU Countries. It represented an excellent opportunity for all the partners to understand the baseline project ambitions, structure, roles, and responsibilities. The meeting provided the opportunity for participants to know each other and to start teaming up. The Athens meeting also welcomed the EC Project Officer, who explained the framework in which the project was to take place.
Three user workshops have been organized so far.

Paris Workshop

The first workshop held on **January 17-18, 2022**, was hosted by **SAMU (Paris Workshop).** Originally planned as an in-person meeting, this was transformed into a web meeting due to the upsurge of the Covid-19 pandemic**.** The virtual meeting involved user partners, UAB members, and key technical partners. The main objectives of the 1st NIGHTINGALE User Workshop were to support the work in the context of the following WP1 tasks:

- Task 1.4 *Overarching scenarios, the definition of user cases, testing and validation activities specific planning*
- Task 1.5 *Definition of functional and non-functional user requirements*
- Task 1.2 *Social, Legal and Ethical Landscape for MCIs handling and Action's Impact Assessment*
- Task 1.7 *User and Technical Validation Protocol, KPIs and Plan*

The workshop program included the following:

- A brief recap of the NIT-MR technical components by ASTRIAL.
- A presentation of current technologies used in MCIs delivered by MDA.

- Three discussion forums.
- A legal, ethical, and social aspects session.

An extended description of the Paris Workshop is available in deliverables **D 1.6 and D 1.8.**

Stockholm Workshop

The second workshop was held in person in March 2022. It was organized in Stockholm by **MRMI&D (Stockholm Workshop, March 21-23, 2022**). The workshop aimed to present the problems encountered in a large-scale disaster to facilitate a shared vocabulary between the technical Partners and other stakeholders in NIGHTINGALE. The large-scale disaster involved the whole chain of mass casualty incident (MCI)-response. Discussion throughout the simulations allowed defining which components of the responses need improvement. Discussion of the technical details helped the technical Partners to envision how to adapt their tools and methods to improve the different steps in the chain of response. Another goal was to present the advantages and limitations of simulations in evaluating possible resources for improving first responders' capacities.

Fifty-two NIGHTINGALE delegates participated to the activity, including technical Partners, user Partners, and UAB members. Participation of all stakeholders in a simulation exercise based on the MACSIM (Mass Casualty SIMulation tool), reproducing the whole chain of MCI response, proved to be very effective. The workshop generated fruitful discussions between the users and the technical partners concerning existing gaps in the actual MCI management and potential improvements through technological solutions. During a "mock-up" session, the technical Partners presented prototypes of the NIGHTINGALE tools. **Annex 9: minutes of the Stockholm Workshop**.

Oslo Round Table

ESTES organized the third workshop during the annual international congress of the Society (ECTES: European Congress of Trauma and Emergency Surgery) in Oslo, **April 24-25, 2022**. Sixteen participants were involved in the **Oslo Round Table (RT)**, representing the user partners and 5 UAB members. ICCS and some other technical partners participated remotely.

This meeting was dedicated to the presentation and discussion of statements that attained consensus following three Delphi rounds organized by UPO-CRIMEDIM in favour of the Scoping Review on elements of the first response to disaster situations. The statements were presented to the NIGHTINGALE end-users. The ultimate aim of the meeting was to translate the statements into practical recommendations, exploring ways of applying them in a SOP (Standard Operating Procedures) MCI response. The process included assigning end-users to specific groups, each in charge of discussing specific themes and subthemes.

The main achievements of the Oslo RT were:

- Finalization of the translational science work performed to achieve the objective of task 1.1 (Triage protocols, damage control, pre-hospitalization process: common denominators and a new paradigm for trauma care); **D 1.1: Common denominators and a new paradigm for trauma care**
- Defining user cases, MCI scenarios, and user requirements related to tasks 1.4 (Overarching scenarios, the definition of user cases and testing and validation activities specific planning) and 1.5 (Definition of functional and non-functional user requirements).

The Oslo RT allowed a significant advancement on task 1.1. Both user Partners and UAB members collaborated on the translational science work (scoping review, internal and external focus groups, and Delphi study). A first manuscript on the methodology used ("Advancing the scientific study of prehospital mass casualty response through a translational science process: the T1 scoping literature reviews phase") is under review at the time of writing this deliverable. During the Oslo RT, the participants could not

complete the planned activities on tasks 1.4 and 1.5. It was agreed to complete these tasks in a supplementary meeting in Novara in May 2022. UPO-CRIMEDIM hosted this meeting during the annual full-scale exercise of the European Master of Disaster Medicine (EMDM). Beyond the Oslo RT, the NIGHTINGALE Consortium recognized ECTES as an opportunity to implement several dissemination activities (ECTES is Europe's leading scientific congress on trauma and emergency surgery). Different aspects of the NIGHTINGALE project were presented to ECTES delegates in several of the congress sessions;

Berlin Round Table and Plenary Meeting

It has to be emphasized the significant contributions of the physical meetings to propagate the process forward. Physical meetings allow the effective exchange of ideas, knowledge, and experiences between the user and technical Partners that otherwise would be difficult to achieve by remote interaction. Furthermore, physical meetings held adjacent to scientific congresses allowed the NIGHTINGALE Consortium to present the project in these academic meetings, enhancing project's dissemination activity. This was evident from ECTES annual meeting in Oslo in 2022 and convinced to organize the second user Round Table (RT) + project Plenary Meeting adjacent to the annual international congress of the German Trauma Society (DGOU). The German Trauma Society is the largest in Europe, and its annual meeting attracts experts in trauma from all over Europe. Flyers describing the NIGHTINGALE project were distributed to the congress delegates, and the project was presented in one of the congress' interactive sessions.

The main topics were:

User Round Table

- The next steps after Oslo RT: the need to transform the recommendations into guidelines;
- Presentation of the conceptual design of the technological tools and re-evaluation of user requirements;
- Validation plans and activities.

MDA presented the forthcoming validation activity: a tabletop exercise (TTX), held in Israel on February 07-08, 2023. The consortium briefly discussed the future validation events: Full Scale Exercises (FSEx), to be conducted in Paris (SAMU) and Savona (ASL2).

Plenary Meeting

- Summary of the project progress, criticalities, and actions to be taken to meet the objectives;
- Ethics Requirements and approval of Ethical Committee Roadmap;
- Presentation of the NIGHTINGALE-MR architecture;
- Dissemination activities presentation of the next user Round Table to be held in Ljubljana on May 2023, merging with the annual European Congress of Trauma and Emergency Surgery (May 07-09);
- More detailed presentation of some of the NIGHTINGALE tools by the proponent technological Partners.

Future initiatives

While the monthly user meetings are ongoing, the next important appointments for the user Assembly are:

1. User Round Table in Ljubljana, to be organized by ESTES, May 05-06, 2023, adjacent to the 2023 annual ECTES.

4 NIGHTINGALE Clustering activities

The NIGHTINGALE project has built close cooperation with other research and innovation projects and relevant stakeholders in the field of EU security research and innovative technologies for first responders. Pre-existing networks and research collaborations have been utilised in the first stages of technology development to learn about the state-of-the-art on technologies and training in the field of emergency and disaster medicine. The NIGHTINGALE partners participated in the full-scale exercise organised by the NO-FEAR project. Furthermore, partners have been actively involved in other knowledge sharing activities, such as workshops and seminars with other H2020 projects.

NIGHTINGALE is also integrated into clustering activities with other Disaster-Resilient Societies section projects (SU-DRS02-2018-2019-2020) of the H2020 Work Programme 2018-2020 that focus on technologies for first responders. The aim of this section is to prepare to disaster response and integrate innovative solutions and technologies that are affordable, accepted by citizens, and customised to meet cross-sectoral needs of diverse groups of first responders.

In March 2023, the NIGHTINGALE project has joined the initiative to establish a **Responder Technology Cluster** of DRS02-related projects, as presented in the following table. The first meeting of the cluster has already been scheduled for M19. The cluster will apply for the Horizon Results Booster services, actively collaborate, and jointly promote project results. Furthermore, the cluster will facilitate knowledge exchange and provide access to relevant networking opportunities and events.

Project name	Project website	Project ID
Novel integrated toolkit for enhanced pre-hospital life support and triage in challenging and large emergencies	NIGHTINGALE	101021957
The First Responder (FR) of the Future: A Next Generation Integrated Toolkit (NGIT) for Collaborative Response, increasing protection and augmenting operational capacity	INGENIOUS	833435
First responder-centred support toolkit for operating in adverse and infrastructure-less environments	RESCUER	101021836
Medical First Responder Training using a Mixed Reality Approach featuring haptic feedback for enhanced realism	MED1stMR	101021775
Team Awareness Enhanced with Artificial Intelligence and Augmented Reality	TeamAware	101019808
Pathogen Contamination Emergency Response Technologies	PathoCERT	883484
Intelligent Toolkit for Reconnaissance and Assessment in Perilous Incidents	INTREPID	883345
Search and Rescue: Emerging technologies for the Early location of Entrapped victims under Collapsed Structures and Advanced Wearables for risk assessment and First Responders Safety in SAR operations	Search and Rescue	882897
Next-generation equipment tools and mission-critical strategies for First Responders	RESPOND-A	883371

In this context, NIGHTINGALE has participated in the following events and clustering activities

No	Partner	Days	Event	Type	Audience
1	ICCS	23-25/03/2022	Community of European Research and Innovation for Security, Disaster Resilient Societies Cluster Conference	Conference	Policymakers
7	ICCS	11-12/05/2022	Public Safety Communications Europe Conference in Salzburg	Conference	Public safety and security stakeholders
13	ICCS, CCL	30/06-01/07/2022	Projects to Policy Seminar (DG HOME, REA C2 unit)	Seminar	DRS cluster projects & policymakers
17	ICCS	14-16/09/2022	Community of European Research and Innovation for Security, Disaster Resilient Societies Cluster Conference	Conference	DRS cluster projects & policymakers

5 Conclusions

The user Partners and UAB members are working well.

This can be attributed to the following:

1. User Partners know each other well because they previously cooperated on other projects;
2. UAB members were recruited from a body (i.e., the Disaster Medicine Round Table) that functioned before the NIGHTINGALE project started;
3. ESTES (UAB coordinator) and UPO-CRIMEDIM (User coordinator) work in tight contact and good synergy.

This cooperation between ESTES and UPO-CRIMEDIM has served ESTES as an important opportunity for "capacity building". While UPO-CRIMEDIM has previous experience participating in EU-funded projects, for ESTES, this is the Society's first exposure.

Communication between the user and technical Partners can be challenging. It often seems that user and technical Partners belong to two "different worlds" and speak two "different languages". In its first year, participants spent a lot of time trying to find a common basis and language. The in-person events proved to be effective in developing mutual comprehension, which was necessary to finalize the tasks and provide the deliverables.

The strategy of merging the consortium events with international scientific events proved beneficial in facilitating the dissemination of the NIGHTINGALE project to target audiences. Scientific meetings such as ECTES and the German Trauma Society annual conferences attract opinion leaders and experts that may help disseminate information on the products of the NIGHTINGALE project.

6 Annexes

Annex Number	Title
1	The Disaster Medicine Oslo Round Table Participants
2	The UAB members on October 01, 2021
3	The UAB members in November 2022
4	ESTES governance in NIGHTINGALE
5	The NIGHTINGALE Practitioners Management and Advisory Board Chart
6	Minutes of the 1st User Meeting
7	Minutes of the Stockholm Workshop

6.1 Annex 1 The Disaster Medicine Oslo Round Table Participants

DISASTER MEDICINE OSLO ROUND TABLE

EuSEM	Abdo Koury - President
WADEM	Joseph Cuthbertson
SDMPH	Eric Weinstein
ICMM	Brigadier-General Erwin Dhondt
STN	Knut Magne Kolstadbraaten
MSF	Edward Chu
ICRC	William Andre Clucas
ESICM	Sophie Hamada
The Gertner Institute for Health Policy & Epidemiology	Kobi Peleg
WHO	Flavio Salio
GEMREG	Amir Khorram Manesh
University of Alberta	Jeffrey Franc
(GEMREG) Gothenburg Emergency Medicine Research Group Salgrenska Academy	Amir Khorram Manesh
MRMI&D International	Sten Lennquist Kristina Lennquist-Montan Carl Montan
UCSC	Daniele Gui Sabina Magalini
MDA	Chaim Rafalovski
Active Citizenship Network	Daniela Quaggia
UPO-CRIMEDIM	Francesco Della Corte Luca Ragazzoni Marta Caviglia

6.2 Annex 2 The UAB members on October 01, 2021

NIGHTINGALE USER ADVISORY BOARD INAUGURAL

EuSEM	Abdo Koury - President
WADEM	Joseph Cuthbertson
SDMPH	Eric Weinstein
ICMM	Brigadier-General Erwin Dhondt
STN	Knut Magne Kolstadbraaten
MSF	Edward Chu
ICRC	William Andre Clucas
ESICM	Sophie Hamada
WHO	Flavio Salio
University of Alberta	Jeffrey Franc
Acute Emergency Clinic of the Evangelical Clinics	Norman Philipp Hecker

6.3 Annex 3 The UAB members in November 2022

NIGHTINGALE USER ADVISORY BOARD NOVEMBER 2022

EuSEM	Abdo Koury - President
WADEM	Joseph Cuthbertson
SDMPH	Eric Weinstein
ICMM	Lieutenant General Pierre Neirinckx
STN	Knut Magne Kolstadbraaten
MSF	Edward Chu
ICRC	William Andre Clucas
ESICM	Tobias Gauss
WHO	Flavio Salio
University of Alberta	Jeffrey Franc
Acute Emergency Clinic of the Evangelical Clinics	Norman Philipp Hecker

6.4 Annex 4 ESTES governance in NIGHTINGALE

ESTES NIGHTINGALE GOVERNANCE ESTES Project Committee

WHO	TASK	RESPONSIBILITIES
NIGHTINGALE WORKING GROUP		
Roberto Faccincani	**ESTES principal investigator**	**Guarantee that the ESTES workplan is respected** **Supervise the project administrator**
Itamar Ashkenazi	**Deputy principal investigator**	**Work together with Roberto and be ready to take over in case is needed**

Carlos Yanez	**D&MS Section representative/civilian/visceral**	**Participate in the project activities**
Gerhard Achaz	**D&MS Section + DGU representative/military/trauma**	**Participate in the project activities**
Henrique Alexandrino	**Advisory Board Member**	**Participate in the project activities**
Cristina Rey Valcarcel	**Advisory Board Chair**	**Participate in the project activities**
Isidro Martinez (or delegate)	**Financial Advisor**	**Supervise the financial management of the project**
Ingo Marzi (or delegate)	**Scientific Advisor**	**Supervise the scientific production of the project**
Manuela Walland	**ESTES Office**	**Project Administrative Officer**
Jonathan Tilsed	**Project Committee Leader**	**Lead the Committee** **Liaison officer between the Committee and the Executive Board**

6.5 Annex 5 The NIGHTINGALE Practitioners Management and Advisory Board Chart

Project Management Guidebook
Task 7.5 Practitioners Management and Advisory Board
User Coordinator (UC): ESTES
Dr. Roberto Faccincani (Principal Investigator)
Dr. Itamar Ashkenazi (Deputy Principal Investigator)
Manuela Walland (Administrative Coordinator)

ESTES (European Society for Trauma and Emergency Surgery) has been assigned the role of coordinator of the Users contribution in NIGHTINGALE.

1) Definitions

Users: in NIGHTINGALE the term "Users" indicates the first responders to an MCI/disaster, medical and non-medical, including immediate responders (citizens).
In NIGHTINGALE Users are Organizations of first responders (Professional Associations, Scientific Societies, Academic Centres…) that are:

- formally beneficiaries of the project: **User Partners**
- non partners: Organizations that have been invited to participate in the project on voluntary basis, because of their expert knowledge of the NIGHTINGALE project topic: management of victims of Mass Casualty Incidents (MCI) and disasters - NIGHTINGALE **User Advisory Board (UAB) Members**

The inaugural UAB Members have been selected among an existing Disaster Medicine Round Table, organized by ESTES previously to be involved in NIGHTINGALE proposal

on the purpose to share knowledge and experience on the topic of MCI and disaster management.

Representatives of both partner and non-partner User Organizations form the **NIGHTINGALE User Assembly**.

2) NIGHTINGALE User Assembly Bylaws

I.Principles

This document is authored to provide the protocols for the administration and guidance function of the **NIGHTINGALE Users Assembly.**

II.Purpose

The purpose of the Assembly shall be to advise, assist and support the NIGHTINGALE Partners on matters that will focus the Partners to achieve their shared Work Product objectives in a timely manner.

User Partners are project beneficiaries, so the participation in the Assembly activities is on interest of their own Organizations as well as of the whole Consortium.

Members of the User Advisory Board are volunteers: their participation shall be encouraged in any form, because it represents both a font of knowledge and experience inputs to the project, as well as a form of quality insurance of the project Work Products, external to the Consortium.

The specific purposes of the Assembly may include the following responsibilities:

1) attend regularly assigned User meetings to review Work Product status reports
2) provide expert opinion to Work Product teams to achieve their objectives
3) facilitate cooperation and communication between Work Product partners and between partners and the NIGHTINGALE coordinators
4) offer recommendations for program improvement
5) assist the program in setting priorities, including participating in ongoing planning activities of the program
6) participate in project events to evaluate/validate Work Product outputs

III.Relationship of Assembly Members to NIGHTINGALE Project

It is the role and sole prerogative of the **NIGHTINGALE Project Partners** to determine the Work Products. The Assembly is expected to offer recommendations for program improvement and to provide information relevant to Partners to accomplish their shared objectives.

IV.Members

Inaugural Assembly Members have be selected and appointed by the Organization that the NIGHTINGALE program has determined to be suitable member. Subsequent Members may be nominated for appointment by both the User Coordinator and the member Organization.

Term: Member terms shall be determined by the member Organization.

Composition:

All the User Partners appoint at least one (1) representative to the Assembly.

The non-partner Organizations appoint a representative to the User Advisory Board. Positions and vacancies are filled as the Assembly requires, particularly if there are specific areas of expertise required to meet the needs of the service population.

V.Organizational Structure

Officers: the Assembly will have a Chair, Vice Chair, and Recording Secretary who are appointed by ESTES, selected as NIGHTINGALE User Coordinator. These officers shall be the Executive Council for the Assembly, in addition to the Project Coordinator who will be an ex-officio member of the Assembly. Duties of officers shall be those commonly ascribed to these offices.

VI.Work Product Group Assignments

Assembly Members can be assigned to Work Product Groups to provide expert opinion and assistance for the Work Product Group to achieve their assigned objective in a timely manner.

VII.Procedural Rules

The Assembly will meet at least four (4) times per year. It is hoped that at least five (5) physical meetings will be organized during the 3 years project; the rest will be web-based. Written notice of upcoming meetings will be sent to Assembly Members at least ten (10) days before a meeting.

Minutes: Draft minutes of each meeting will be produced by the Recording Secretary, sent to the Chair and members who participated in the meeting for review within one (1) week. The receivers have another one (1) week to suggest changes and then the final report will be produced and sent to all the Assembly Members and to the Project Coordinator. These final reports shall be stored in an appropriate folder in the project website and made accessible to all the Project Partners and Advisory Board Members.

Recommendations and Reports: Recommendations and reports will be submitted in writing to the Executive Council by the Assembly Members. Documents will include both suggested action and justifications for suggestions. The Executive Council will respond/react to such recommendations/reports in writing.

Dismissal: In case an Assembly Member fails without notification or reason to take part in three (3) successive meetings and/or from the assigned Work Product group, the Executive Council will notify the Project Coordinator and the Member Organization, in order to appoint a new delegate.

Bylaws adopted [date]

Bylaws amended [most recent amendment date]

6.6 Annex 6 Minutes of the 1st User Meeting

MEETING MINUTES NIGHTINGALE Users Advisory Board (UAB) Zoom Meeting, September 29, 2021

NIGHTINGALE Users Advisory Board Meeting Date: Wednesday, September 29, 2021 **Time:** 18:00 – 19:30 CEST
Location: Zoom Meeting
Minutes created by: Ulrike Maria Pötscher (UMP)
Participants:

- • Roberto Faccincani (RF) ESTES
- • Carl Montan MRMI&D International
- • Sten Lennquist MRMI&D International
- • Kristina Lennquist-Montan MRMI&D International

- • Eric Weinstein SDMPH (Society for Disaster and Emergency Medicine)
- • Carlos Yanez ESTES
- • Daniela Quaggia Cittadinanzattiva (Active Citizenship Network)
- • Edward Chu MFS (Medecins Sans Frontieres)
- • Eleftherios Ouzounoglou ICCS (Institute of Communications and Computer Systems)
- • Erwin Dhondt ICMM (International Committee of Military Medicine)
- • Evangelos Sdongos ASTRIAL
- • Gerhard Achatz ESTES
- • Itamar Ashkenazi ESTES
- • Jeffrey Franc University of Alberta
- • Jonathan Tilsed ESTES
- • Knut Magnus Kolstadbraten STN (Society of Trauma Nurses)
- • Kobi Peleg The Gertner Institute for Health Policy & Epidemiology
- • Luca Ragazzoni UPO-CRIMEDIM
- • Itamar Laist MDA (Magen David Adom)
- • Manuela Walland ESTES
- • Abdo Khoury EUSEM (European Society for Emergency Medicine)
- • Amir Khorram-Manesh GEMREG (Gothenburg Emergency Medicine Research Group)

Excused:
- • Sophie Hamada ESICM (European Society of Intensive Medicine)
- • William Andre Clucas IRC (International Committee of the Red Cross)
- • Joseph Cuthbertson WADEM (World Association for Disaster and Emergency Management)

1. Welcome by Roberto Faccincani (RF)

RF welcomes everybody to the meeting and presents the agenda. **No comments on the agenda.**
2. Organizational Topics

UMP asks all participants for
- their authorization to record the meeting and make it available together with the meeting minutes.

Accepted.
- a short CV and a photo to create a file of all participants and to enable and encourage communication between all people also apart from the project. **Accepted.**
- their approval to create a WhatsApp group for fast and easy communication. **Accepted.**
- sending their PPPs in advance for those who are going to present in future meetings. **Accepted.**

3. Team up RF calls the participants one by one and asks to introduce themselves. All participants provide information on their background, current position, and further activities.

4. Presentation of the NIGHTINGALE Project (RF) NIGHTINGALE – Novel InteGrated toolkit for enhanced pre-Hospital life support and Triage IN challenGing And Large Emergencies.

NIGHTINGALE is an EU funded project under the program Horizon 2020. The duration of the project is 36 months, starting on Friday October 1st, 2021. The topic of the project is to research and to produce methods & guidelines for pre-hospital live support and triage.

NIGHTINGALE will develop, integrate, test, deploy, demonstrate and validate a novel integrated toolkit for emergency medical response (NIT-MR) which ensures an upgrade to pre-hospital life support and triage.
5. Presentation of the User Advisory Board tasks (RF)

RF presents the list of participants of the NIGHTINGALE project that includes 23 partners.
The word document called "Nightingale Project" is enclosed to the minutes.
ICCS (Institute of Communications and Computer Systems) in Greece is the project coordinator. ICCS is a non-profit academic research body established in 1989 by the Greek Ministry of Education to carry out research and development activities in telecommunication, computer systems and their applications. ICCS is very experienced and participated already in a great number of EU funded projects. ICCS provides from October 1st, 2021, on an online collaboration platform that will comprise everything related to the program. With this platform ICCS will be able to facilitate the work of the Advisory Board through forums, chat rooms, etc. to contribute to an active discussion. All documents created during the project will be sent to Eleftherios Ouzounoglou for documentation reasons. All documentation for the European Commission like papers, statements, guidelines will be presented not only to the commission but also to the scientific community. This information will be available for all people in open source, international journals, etc.
The role of ESTES is to lead a group of experts, including some of the most experienced people around the world. With the disaster and military surgery section and the recently established Disaster Medicine Round Table, ESTES represents a unique platform in Europe and beyond for pre-hospital and in-hospital, civil, military and humanitarian, medical and non-medical end users on disaster medicine.
ESTES guides and implements the end users' activities requested in the project, which are:
1. To share knowledge and experience within the group of experts regarding the topic of management of victims in disasters.
2. To make the "state of the art" on this topic.
3. To brainstorm regarding how the experts forecast the management of victims in disasters in 5-10 years.
4. To agree on the existing gaps from the as-is and the to-be situation.

5. To set the requirements for the tech partners on the tools to improve the rescue and management of victims during disasters.
6. To evaluate and validate the proposed tools.
7. To propose educational format to train first responders.
8. To extract science knowledge from these processes.

ESTES's tasks during the next 36 months:
1. Realization of 5 physical / web-based meetings of the Advisory Board.
2. Publication open source of 5 manuscripts / handbooks of the project.
3. Participation in the project events (meetings, simulation, exercises etc.)
4. Disseminate the project results among all ESTES and Advisory Board members and contacts.

6. Questions and Remarks:

Abdo Khoury is interested to collaborate as a partner in this project and asks if this is still possible. RF is pleased about the interest of EUSEM and welcomes Abdo Khoury to be part of the Advisory Board. Unfortunately, it is not possible to include EUSEM as a main partner in this project.
Evangelos Sdongos asks
1. to expand the Advisory Board. There are some organizations that were not able to participate in this meeting but would like to be part in the next one.

RF agrees and asks ICCS to forward the contact details to UMP and invite them to the next meeting.
2. for improvement of the training systems. Training aspects are quite important because e.g., of different protocols in different countries, so the system should be improved in general.

RF agrees and proposes to discuss and agree on improvement of training in disaster setting together with CRIMEDIM and MRMI&D.

7. Miscellaneous:

1. Next physical Advisory Board Meeting will most likely be held in Oslo where the ESTES International Annual Congress will take place from April 24 to 26, 2022. ESTES will come up with a proposed meeting date asap.
2. UMP will send out a Doodle poll to agree on a next web based Advisory Board Meeting that will take place at the beginning of November.
3. UMP will send the drafted minutes to all of you, latest by Wednesday, October 5 and ask for your inputs or modifications.

Please send your inputs within 2 - 3 days back, after that the minutes are considered as approved.

8. Closing words:

RF closes the meeting with the statement that The Advisory Board together with all partners will do a very good job and the result will be highly important for the future of disaster management in Europe.

6.7 Annex 7 Minutes of the Stockholm Workshop

Report from the Nightingale workshop in Stockholm March 21 - 23, 2022

Background and aims

The aim of this workshop was to illustrate the whole chain of mass casualty incident (MCI)-response with the use of simulation exercises, in order to (a) identify components with a need and potential for improvement and (b) facilitate for the technical partners of the project to adapt their methods to the different steps in the chain of response. An additional goal was ro find out if, and if so how, simulation techniques could be used for scientific analysis and comparison of different methods in MCI response, of potential benefit for the project.

Participating organisations and delegates

The workshop was organised in collaboration between the International MRlvIID-association, the Nightingale project group, the Karolinska Hospital and the Stockholm Health Care. Totally 52 delegates from the Nightingale project pa1ticipated together with 22 international MRMI-instrnctors and 92 Swedish Health Care providers from prehospital and hospital organisations, acting in different roles in the exercises, where also members of the Nightingale group could participate.

Fig 1. The international MRMID association (Medical Response to Major Incidents & Disasters) is a non-profit organisation and an affiliated society to ESTES. It has since 2009 been running courses in Mass Casualty Management in an expanding number of international centers, with totally more than 7 000 trained. The courses are highly standardised with the methodology based on a coursebook (1), widely spread and translated to several languages.

Methodology

The simulation system used for the exercises /demonstrations in this workshop was the MACSIM system (MAss Casualty SIMulation), originally developed for scientific analysis and comparison of methods in MCI-response (2), but also from 2009 successfully used in the international MRMI-courses (medical response to major incidents & disasters) for training (3), where its accuracy had been scientifically validated in a large international study (4). The plan was to base the workshop on a modified MRMI- course, specially designed for demonstration, and with opportunity for Nightingale delegates to participate in the exercises on volunta1y base, and also test new methods that could fit into the model. The scenarios for these exercises were designed according to the requests from the Nightingale project management.

The MRMI courses are normally highly standardized courses with a uniform program, including one day of introductory lectures/training followed by two days of full- scale simulation exercises, one each day, with different scenarios. The exercises are fully interactive with all participants acting in their real roles. The aim is to train decision making in the whole chain of management (scene, transport, emergency department, OR, ICU, wards and also local, regional and national command and communication)(3). This is made possible with the advanced simulation system (fig.I), which supplies the trainee with all and the same data he/she has on each point in real life as a base for the decisions. It also supplies the trainee with a complete feed back to the decisions with regard outcome (preventable mortality and complications) and accuracy in ale1ting and using resources, as a necessa1y base for accurate learning and in1provement of methodology. The whole chain of management is trained simultaneously, because one of the most common reasons for failure is deficiencies in communication and coordination between different actors. This means involvement also of non- medical rescue staff, police, military and administrative staff.

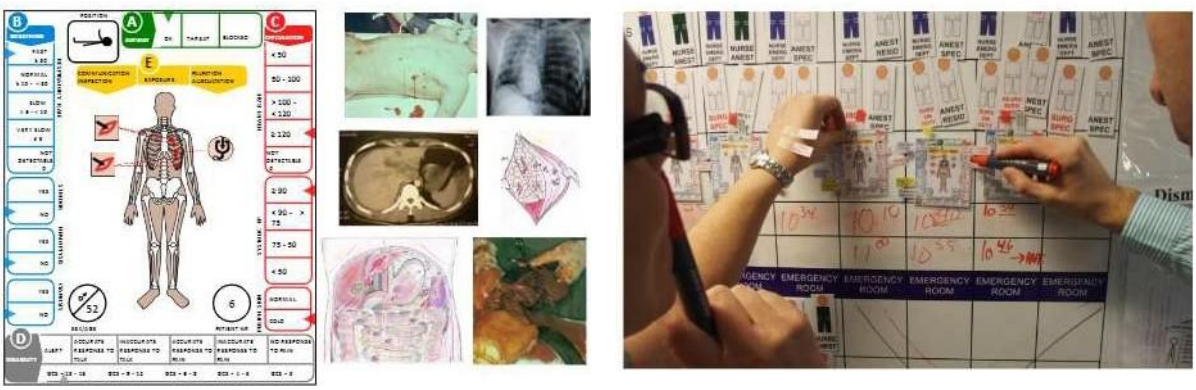

Fig 2. The MACSIM• simulation system used in the MRMI-couses To the left: The magnetic casualty cards in the simulation system are based on real scenarios. Along the margins of the cards, the physiological parameters indicating the patient's

condition, in the center description of injuries with a simple symbol system. The trainee can, on relevant points in the chain, get access to data files with findings at X-ray and in surgery, as a base for decisions.
To the right:The cards areprocessedthrough the chain of response by the actingstaff and all treatments indicated by tags. The exercises are run in real time with real resources. All treatments consume the same time and the same resources as in reality. The instructors have access to data with regard to what has to be done within a certain time if the patient should survive without severe complications. This gives preventable deaths and complications as a measurable result of the exercise. Since scenarios and methodology are standardized, this offers an opportunity to compare and evaluate different methods, and also measure effects of changes in resources, organisation or methodology (5,6).

Design of the workshop

The workshop included three days, starting at lunch day one and ending in the afternoon day three, to save extra days for travelling. The first day was used to introduce the simulation model with emphasis on the key points in training of mass casualty management to avoid potential failures in the response. Examples of use of the simulation model for scientific analysis of methodology were also illustrated, for example in comparison of triage methods and studies on health care capacity to handle mass casualties. Finally, all participants were given the oppo1tunity to get acquainted to, and also train with, the simulation model.

Day two staiied with a presentation and a video recording from the terrorist attacks in Paris 2015, given by one of the MRMI- instructors, Olivier Stibbe, who also served as a medical incident commander during the attacks. This gave an illustrative background for the participants to "get in the mood" for the following exercises.

This day were run two parallel scenarios in a fictive country, Anyland, described in detail with regard to structure, geography and all resources involved in an MCI. The first scenario was a terrorist attack in a tourist hotel far from nearest hospital with two bombs, causing 360 injured and dead and requiring many of the country's resources for rescue, transport and health cai·e (MCI level 3). The casualties in this scenai·io were taken from the Madrid terrorist attack 2004.

Parallel to this scenario occurred a mass-shooting event in the major airpo1i of the capital of the same country, causing much pressure on security, rescue- and health care and also on the coordinating functions both on local, regional and national level. This scenario included 110 injured and dead, with injuries taken from US civilian mass shootings.

About twenty of the Nightingale delegates participated on a voluntary base as acting in different positions in the chain of response. The rest of the delegates could follow the exercise on large screens in a streaming study, where live pictures could be switched between two mobile video teams and five pe1manent cameras, altogether covering the whole response, with comments from an instructor (fig. 2). They could also visit all the different stations, where special space was made for observers. Finally, they all took paii in the thorough evaluation with all participants after the exercise.
The day ended for the Nightingale group with a discussion of identified points for improvement in the chain of MCI response, and how such in1provements could be done. Many of the technical partners in the project announced that the exercises had given them ideas to modify their techniques and adapt them to the reality and real needs in an MCI. Also, some new ideas came up.

The second day started with a terrorist attack during an ongoing rock-festival in a sport arena in the capital in Anyland with 120 injured and dead. partly from shooting with machine guns, partly by congestion because of pailic movement in the arena. Soon after this attack had started, a run-over scenario occurred in the center of the same city, ending with explosion from a truck cai-rying a bomb with the intention to blow up the convention center. The injuries were taken from nm over scenarios, civilian mass shootings and blasts.

The Nightingale delegates did this day not take pa1t in the evaluation, but proceeded to a mock - up session for technical partners with special emphasis on the input from, and ideas generated by, the exercises. The ti.me devoted for this session was unfortunately much too shon related to the needs. The workshop should have been prolonged with one day to cover this part fully. Then also the wide presence of experienced users could have been utilized better for this part. However, the discussions held were very fruitful.

Fig.3 The Nightingale delegates could take active part in the exercises, or watch as observers on all stations, but also get an overview from a special streaming study, from which the exercises were continuously recorded by two mobile lV-teams and five permanent video-cameras. Here commented by Sten Lennquist, President of MRMID.

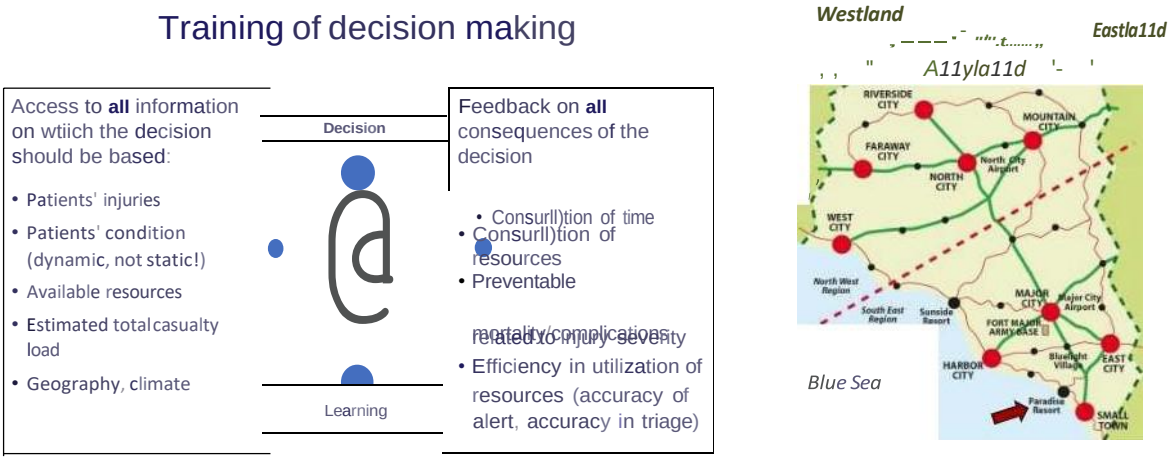

Fig4. The MRMI- course is a training in decision-making along the whole line of MCI- response: Scene, transport, all different components of the hospital and also local, regional and national command. Such training requires access to all and the same data the trainees have in reality, otherwise the accuracy of the decisions cannot be evaluated. In addition to patient data (which are dynamic, not static, see fig 2) is required information about all kinds of resources and their location, which isgiven in the form of a fictive and in detail described country (Anyland) being the base for the exercises (to the right).

Fig 5. When an MCI is declared (from the alarm center or from the first ambulance on scene) the regional command center (health care, rescue and police) is alerted and leads the coordination of the response. To the right: Hospitals are alerted and requested to give immediate capacity reports as a base for dish'ibution of casualties.

Fig 6. The Medical Incident Commander, the Triage Officer and the Ambulance Loading Officer constitute the command group for health-care on scene, working in close collaboration with Rescue and Police Incident Commanders. To the right: Decisions with regard to triage, and who requires

treatment/stabilisation on scene and who should be sent directly, have to be done under severe time-pressure, requiring high skills and thereby extensive training.

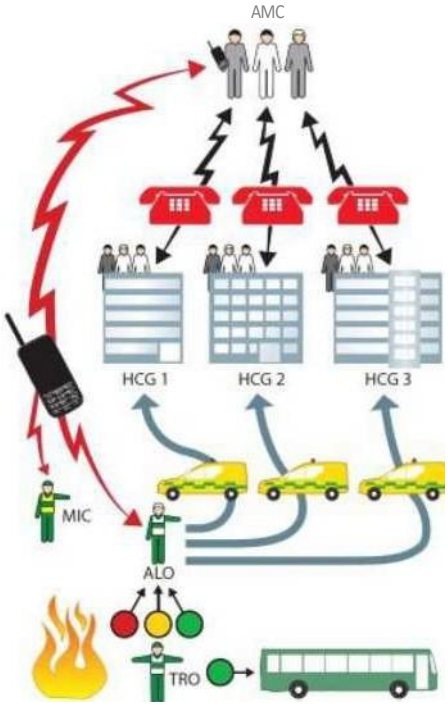

Fig 7. Every ambulance has to be utilised efficiently, no Staffed ambulance should wait on scene for decision whom to send, and where. This requires well trained coordination between regional command center and the hospital command groups (HCG), to the right. In the Nightingale exercises, 70 ambulances and 15 helicopters were in action together with buses and coaches for less severely injured.

Fig 8. In hospital, the training staff have access to pictures from X-ray (when used) and surgical findings (in OR) as base for decisions.

Fig 9. Strict use of damage-control procedures in surgery is necessary to reduce time in OR, and also limit theneed of blood, in big scenarios like this. The most common final capacity limiting factor is access to ventilators in ICU

Fig 10. Nightingale delegates participated In the evaluation, maybe the most important part of the exercises, where every preventable death is analysed, as the efficiency in use of activated resources of all kind and decisions wit regard to coordination and command.

Test of new MCI-methodologies in the exercises

Although the main objective of this workshop was to identify and discuss improvements of weak points in the chain of MCI-response, it should also give an oppo1tunity to perform pilot tests of methods suitable to test in these kinds of exercises. One such method was tracking casualties through the chain of response using QR-codes connected to all casualties, connected to ID-data for all "patients". These codes could then be scanned on all positions in the chain of response as a base for registration of patients, but also giving continuous infomrntion about the flow and distribution of patients.

For this purpose, small size QR-codes were produced for all the used casualty-cards. Every card was also given an ID including full name, date of birth, security number and medical record. All data were designed in a way that they not could be mixed with, or mistaken to be, real data. Registration was then done parallel with scanned QR-codes and manual registration in transpo1i cards following the patients, with logs to fill in at every position in the chain. Results from the QR-scanning are still under evaluation by the responsible technical partners. One finding was that it required time and training of the staff to do it, but it had a great potential to give valuable information. The manual registration was even more time-consuming and it was very difficult to get time to fill in full data in the transport cards without unacceptable delay in evacuation. This is in total agreement with experiences from real MCI: s. Development of alternative methods is therefore important and should be given priority.

Fig 11. Nightingale delegates, MRMI- instructors and voluntary actors from Swedish Healthcare at the closure of the Nightingale workshop in Stockholm March 2022.

The workshop generated very fruitful discussions with regard to potential improvements in the chain of MCI- response and where, and in which way, our technical partners can help in facilitating the important task to preserve life and health and lin1it suffering for as many as possible in these extremely difficult situations. The experiences from this workshop have been often referred to in the continued progress of the project.
CCL has put together a short video based on the recordings during the exercise, which is planned to be available on YouTube (link will be distributed). A longer demo-video based on this material is also under planning as a support for organisers of exercises in MCI- response, as a product from the project.

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