
NORTH ATLANTIC TREATY
ORGANIZATION



AC/323(HFM-163)TP/476

SCIENCE AND TECHNOLOGY
ORGANIZATION



www.sto.nato.int

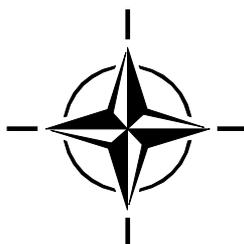
RTO TECHNICAL REPORT

TR-HFM-163

Improving the Organisational Effectiveness of Coalition Operations

(Amélioration de l'efficacité structurelle
des opérations en coalition)

This document is the Final Report of RTO Task Group HFM-163.



Published November 2012

Distribution and Availability on Back Cover





RTO TECHNICAL REPORT

TR-HFM-163

Improving the Organisational Effectiveness of Coalition Operations

(Amélioration de l'efficacité structurelle
des opérations en coalition)

This document is the Final Report of RTO Task Group HFM-163.

Edited by

Y. Yanakiev and J.S. Horton

The NATO Science and Technology Organization

Science & Technology (S&T) in the NATO context is defined as the selective and rigorous generation and application of state-of-the-art, validated knowledge for defence and security purposes. S&T activities embrace scientific research, technology development, transition, application and field-testing, experimentation and a range of related scientific activities that include systems engineering, operational research and analysis, synthesis, integration and validation of knowledge derived through the scientific method.

In NATO, S&T is addressed using different business models, namely a collaborative business model where NATO provides a forum where NATO Nations and partner Nations elect to use their national resources to define, conduct and promote cooperative research and information exchange, and secondly an in-house delivery business model where S&T activities are conducted in a NATO dedicated executive body, having its own personnel, capabilities and infrastructure.

The mission of the NATO Science & Technology Organization (STO) is to help position the Nations' and NATO's S&T investments as a strategic enabler of the knowledge and technology advantage for the defence and security posture of NATO Nations and partner Nations, by conducting and promoting S&T activities that augment and leverage the capabilities and programmes of the Alliance, of the NATO Nations and the partner Nations, in support of NATO's objectives, and contributing to NATO's ability to enable and influence security and defence related capability development and threat mitigation in NATO Nations and partner Nations, in accordance with NATO policies.

The total spectrum of this collaborative effort is addressed by six Technical Panels who manage a wide range of scientific research activities, a Group specialising in modelling and simulation, plus a Committee dedicated to supporting the information management needs of the organization.

- AVT Applied Vehicle Technology Panel
- HFM Human Factors and Medicine Panel
- IST Information Systems Technology Panel
- NMSG NATO Modelling and Simulation Group
- SAS System Analysis and Studies Panel
- SCI Systems Concepts and Integration Panel
- SET Sensors and Electronics Technology Panel

These Panels and Group are the power-house of the collaborative model and are made up of national representatives as well as recognised world-class scientists, engineers and information specialists. In addition to providing critical technical oversight, they also provide a communication link to military users and other NATO bodies.

The scientific and technological work is carried out by Technical Teams, created under one or more of these eight bodies, for specific research activities which have a defined duration. These research activities can take a variety of forms, including Task Groups, Workshops, Symposia, Specialists' Meetings, Lecture Series and Technical Courses

The content of this publication has been reproduced directly from material supplied by STO or the authors.

Published November 2012

Copyright © STO/NATO 2012
All Rights Reserved

ISBN 978-92-837-0175-0

Single copies of this publication or of a part of it may be made for individual use only by those organisations or individuals in NATO Nations defined by the limitation notice printed on the front cover. The approval of the STO Information Management Systems Branch is required for more than one copy to be made or an extract included in another publication. Requests to do so should be sent to the address on the back cover.

Table of Contents

	Page
List of Figures	viii
List of Tables	x
List of Acronyms	xi
Acknowledgements	xiii
HFM-163 Membership List	xiv
Executive Summary and Synthèse	ES-1
Chapter 1 – Introduction	1-1
1.1 Background	1-1
1.2 Objectives	1-2
1.3 Method of the Work	1-2
1.4 Structure of the Report	1-4
1.5 Authorship	1-5
Chapter 2 – Results of Subject-Matter Expert Focus Group Discussions	2-1
2.1 Background	2-1
2.2 Methodological Approach	2-1
2.3 Research Findings from NATO HFM-163 SME Interviews	2-1
2.3.1 SMEs’ Evaluations Regarding the Factors that Influence Organisational Effectiveness of Coalition Operations	2-2
2.3.2 SMEs’ Evaluations Regarding the Enablers of Organisational Effectiveness of Coalition Operations	2-3
2.4 Conclusions	2-5
Chapter 3 – Theoretical Framework and Model	3-1
3.1 Review of Organisational Effectiveness Models	3-1
3.1.1 Command Team Effectiveness Model	3-1
3.1.2 The Star Model	3-2
3.1.3 The 7-S-Model	3-4
3.1.4 Behavioural Engineering Model	3-5
3.1.5 Internal System Approach to Organisational Effectiveness	3-6
3.2 Description of the Model for the Assessment of Organisational Effectiveness of NATO HQs	3-6
3.2.1 Operative Goals	3-8
3.2.1.1 Effective and Timely Sharing of Information	3-8
3.2.1.2 Effective and Timely Decision Making	3-8
3.2.1.3 Shared Awareness of Tasks and Responsibilities	3-8
3.2.2 Input Factors	3-9

3.2.2.1	Structure and Processes	3-9
3.2.2.2	People	3-10
3.2.2.3	Culture	3-12
3.3	Hypotheses	3-14
Appendix 3.1: List of Hypotheses		3-15
 Chapter 4 – Method		 4-1
4.1	Materials	4-1
4.1.1	Questionnaire	4-1
4.1.1.1	Background Variables	4-1
4.1.1.2	Operative Goals	4-1
4.1.1.3	Structure and Processes	4-1
4.1.1.4	People	4-2
4.1.1.5	Culture	4-2
4.1.2	Interviews	4-2
4.2	Participants and Procedure	4-2
4.2.1	Questionnaire	4-3
4.2.2	Interviews	4-4
4.3	Data Analysis Plan	4-4
4.3.1	Questionnaire	4-4
 Chapter 5 – Results		 5-1
5.1	Data Preparation and Screening	5-1
5.2	Internal Consistency Reliability Analyses	5-1
5.2.1	Operative Goals	5-1
5.2.2	Structure and Processes	5-1
5.2.3	People	5-2
5.2.4	Culture	5-2
5.3	Descriptive Statistics and Simple Correlations	5-2
5.3.1	Mean Differences Between Training Groups	5-5
5.4	Hierarchical Regression Analyses: Alignment of the Operative Goals and Input Factors (Full Sample)	5-5
5.4.1	Decision Making	5-5
5.4.2	Information Sharing	5-5
5.4.3	Shared Awareness	5-5
5.5	Hierarchical Regression Analyses: Alignment of the Operative Goals and Input Factors (Training Sample)	5-6
5.5.1	Decision Making	5-6
5.6	Moderating Analyses: Team Trust as a Moderator of the Relationships Between the Structure and Process Variables and Operative Goals	5-6
5.6.1	Decision Making	5-6
5.6.2	Information Sharing	5-7
5.6.3	Shared Awareness	5-7
5.7	Moderating Analyses: Alignment and Power Distance as Moderators of the Relationships Between the Organic and Flexibility Variables and Between the Organic Variable and the Operative Goals	5-7

Chapter 6 – Interview Analysis	6-1
6.1 Content Analysis	6-1
6.1.1 Organisational Structure: J-Structure or Other	6-1
6.1.2 Organisational Structure: Hierarchical or Flat	6-2
6.1.3 Centralised or Decentralised Command Processes	6-3
6.1.4 Flexible or Rigid Work Environment	6-4
6.1.5 Specialists or Overlapping Roles	6-5
6.1.6 Leadership	6-6
6.1.7 Pre-Deployment Training	6-8
6.1.8 Personnel Rotations and Handover Process	6-8
6.1.9 Multi-Nationality	6-10
6.1.10 Trust	6-11
6.1.11 Improvement Orientation	6-13
6.1.12 Information Sharing	6-14
6.1.13 Decision Making	6-16
6.1.14 Shared Awareness of Tasks and Responsibilities	6-18
6.1.15 Important Aspects / Summary	6-20
Chapter 7 – Discussion	7-1
7.1 General Contribution	7-1
7.2 Discussion of Main Findings	7-1
7.2.1 Structure and Process	7-1
7.2.2 People	7-2
7.2.3 Culture	7-3
7.2.4 Summary of Main Findings	7-3
7.3 Limitations	7-4
7.4 Implications for Practice	7-4
7.4.1 Congruence Between the Way People are Used to Working and the Way the HQ is Organised	7-4
7.4.2 Leadership of an Operational NATO HQ Cannot Simply Assume the Staff Shares Common Attitudes	7-5
7.4.3 Managing Processes in a NATO HQ and the Rotation Process	7-5
7.4.4 Trust	7-5
7.4.5 Reducing the Challenges of a Multi-National Context	7-6
7.4.6 On Diagnosing the Need for Implementing Advice	7-6
7.5 Future Research	7-6
Chapter 8 – References	8-1
Annex A – Results from SMEs Focus Group Discussion at NATO School, Oberammergau, Germany during the HFM RTG-163 Meeting, 22-24 October 2008	A-1
Annex B – Results from SMEs Focus Group Discussion at NATO Allied Command Transformation, Norfolk, VA, USA during the HFM RTG-163 Meeting, 7-9 June 2009	B-1

Annex C – Improving the Organisational Effectiveness of Coalition Operations **C-1**

<i>Abstract</i>	C-1
C.1 Introduction	C-2
C.2 Organisational Effectiveness	C-3
C.2.1 Definition	C-3
C.2.2 Review of Organisational Effectiveness Models and Approaches	C-6
C.2.2.1 Command Team Effectiveness Model	C-6
C.2.2.2 Star Model	C-7
C.2.2.3 7-S-Model	C-8
C.2.2.4 Internal System Approach to Organisational Effectiveness	C-10
C.2.3 Preliminary Conclusions on the Models	C-10
C.3 Description of the Model	C-10
C.3.1 Internal Alignment	C-11
C.3.2 Structure and Processes	C-11
C.3.3 People	C-12
C.3.4 Culture	C-13
C.4 Description of the Instrument	C-15
C.4.1 Operative Goals	C-15
C.4.2 Structure and Processes	C-15
C.4.3 People	C-15
C.4.3.1 Leadership	C-15
C.4.3.2 Pre-Deployment Training	C-15
C.4.3.3 Rotation	C-16
C.4.4 Culture	C-16
C.4.4.1 Trust	C-16
C.4.4.2 Openness to Diversity	C-16
C.4.4.3 Improvement Orientation	C-16
C.5 Conclusion	C-16
C.6 References	C-17

Annex D – Organizational Effectiveness of Multi-National Operations’ Headquarters **D-1**

Annex E – Interview Protocol **E-1**

E.1 Demographics	E-1
E.2 Main Questions	E-1

Annex F – Report on the Preliminary Results from Organizational Study within KFOR Headquarters, 11-15 October 2010 **F-1**

F.1 Background and Objective	F-1
F.2 Survey Results	F-1
F.3 Interview Results	F-4
F.4 Recommendations	F-6
F.5 Contact Information	F-7
Appendix F.1: Items per Dimension	F-8

Annex G – Understanding Factors that Influence Coalition Teamwork

G-1

Abstract

G-1

G.1 Introduction

G-1

G.1.1 NATO Current Operations

G-1

G.1.2 Goals of Paper

G-2

G.1.3 Model of Organizational Effectiveness for Coalition Teamwork

G-2

G.1.3.1 Performance, Role Interdependence, Information Sharing Model (PRISM)

G-2

G.1.3.2 Inter-Organisational Collaborative Capacity

G-3

G.1.4 Summary

G-4

G.2 Methods

G-4

G.2.1 Participants

G-4

G.2.2 Measures

G-4

G.3 Results

G-6

G.3.1 Reliability

G-6

G.3.2 Differences in Means

G-8

G.3.3 Correlations

G-9

G.4 Discussion

G-13

G.4.1 Military Benefits

G-14

G.5 References

G-14

List of Figures

Figure		Page
Figure 3-1	CTEF Model	3-2
Figure 3-2	Star Model	3-3
Figure 3-3	7-S-Model	3-4
Figure 3-4	Model of Organisational Effectiveness of Non-Article 5 Crisis Response Operations' HQs	3-8
Figure 3-5	Terminal and Instrumental Values in a NATO HQs' Organisation	3-13
Figure 5-1	Mean Ratings on the Input Factors ($N = 103$)	5-2
Figure 5-2	Mean Ratings on the Operative Goals ($N = 103$)	5-3
Figure 5-3	The Moderating Effect of Alignment on the Relationship Between Decentralised Processes and Decision Making at High ($M + 1 SD$) and Low Alignment ($M - 1 SD$; $N = 103$)	5-10
Figure 5-4	The Moderating Effect of Power Distance (Pd) on the Relationship Between a Flat Structure and Flexibility at High ($M + 1 SD$) and Low Pd ($M - 1 SD$; $N = 103$)	5-11
Figure 6-1	The Relationship Between Hierarchy and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness	6-2
Figure 6-2	The Relationship Between Centralised/Decentralised Command Processes and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness	6-3
Figure 6-3	The Relationship Between Flexibility and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness	6-5
Figure 6-4	The Relationship Between Role Specialisation and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness	6-6
Figure 6-5	The Relationship Between Leadership and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness	6-7
Figure 6-6	The Relationship Between Pre-deployment Training and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness	6-8
Figure 6-7	The Relationship Between Rotations and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness	6-9
Figure 6-8	The Relationship Between Multi-Nationality and Openness to Diversity and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness	6-11
Figure 6-9	The Relationship Between Trust and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness	6-12
Figure 6-10	The Relationship Between Improvement Orientation and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness	6-14
Figure 6-11	The Relationship Between Information Sharing and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness	6-15
Figure 6-12	The Relationship Between Decision Making and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness	6-17
Figure 6-13	The Relationship Between Shared Awareness and the Other Input Factors and Operative Goals of the Model of Organisational Effectiveness	6-19

Figure C-1	CTEF Model	C-7
Figure C-2	Star Model	C-8
Figure C-3	7-S-Model	C-9
Figure C-4	Model of Organisational Effectiveness of Non-Article 5 Crisis Response Operations' HQ	C-11
Figure C-5	Terminal and Instrumental Values in a NATO HQ's Organisational Culture	C-14
Figure F-1	Summary of Organizational Factors within KFOR HQ 2010	F-3
Figure F-2	Summary of Organizational Outcomes within KFOR HQ 2010	F-4
Figure G-1	The Performance, Role Interdependence, Information Sharing Model (PRISM)	G-3
Figure G-2	Differences in Means Between U.S. and Bulgarian Samples	G-8

List of Tables

Table		Page
Table 2-1	Basic Characteristics of an Effective Coalition HQ	2-4
Table 3-1	Behavioural Engineering Model	3-5
Table 4-1	Socio-Demographics of Respondents	4-3
Table 5-1	Simple Correlations Among the Input Factors and Operative Goals	5-4
Table 5-2	Moderating Analyses: Alignment and Power Distance (Pd) as Moderators of the Relationships Between the Organic and Flexibility Variables and Between the Organic Variable and the Operative Goals (<i>N</i> = 103)	5-8
Table 5-3	Moderating Analyses: Alignment and Power Distance (Pd) as Moderators of the Relationships Between a Flat Structure, Decentralised Processes, and Flexibility and the Operative Goals (<i>N</i> = 103)	5-9
Table C-1	Basic Characteristics of an Effective Coalition HQ	C-6
Table F-1	Socio-Demographics of Respondents	F-2
Table G-1	Means, Standard Deviations, and Coefficient Alpha for the Scales	G-7
Table G-2	Correlations Between the ICC Scales and the Information Sharing Scale	G-9
Table G-3	Correlations Between the Information Sharing and Trustworthiness	G-10
Table G-4	Correlating Cohesion with Trustworthiness and Information Sharing	G-10
Table G-5	Correlations Between the ICC Scales and Task Cohesion Scale	G-11
Table G-6	Correlations Between the ICC Scales and Perceived Coalition Effectiveness Scale	G-12

List of Acronyms

AAR	After Action Review
ACOS	Assistant Chief Of Staff
ACT	NATO Allied Command Transformation
AFRL	U.S. Air Force Research Laboratory
ARI	US Army Research Institute for the Behavioural and Social Sciences
BEM	Behavioural Engineering Model
BIH	Bosnia and Herzegovina
C2	Command and Control
CTEF	Command Team Effectiveness Model
DARI	Defence Advanced Research Institute
DEOMI	U.S. Defense Equal Opportunity Management Institute
DRDC	Defence Research and Development Canada
EM	Expectation Maximization estimation
ET	RTO Exploratory Team
ETH	Swiss Federal Institute of Technology
FFI	Norwegian Defence Research Establishment
FOI	Swedish Defence Research Agency
HFM	Human Factors and Medicine Panel
HO/TO	Hand-Over/Take-Over
HQ	Headquarter
HSG	Headquarters Support Group
ICC	Inter-organisational Collaborative Capacity model
INDC	Israeli National Defence College
ISAF	International Security Assistance Force
JFC	Joint Forces Command
JIC	Joint Intelligence Cell
KFOR	NATO Kosovo Force
KSF	Kosovo Security Force
LEGAD	Legal Advisor
LL	Lessons Learned
LTCRs	NATO Long-Term Capability Requirements
MCA	Military Civil Advisory Division
MD	Mediterranean Dialog
MEDAD	Media Advisor
NA5CRO	Non-Article 5 Crisis Response Operations
NAVAIR	U.S. Naval Air Systems Command
NDC	NATO Defence College
NNEC	NATO Network-Enabled Capabilities

Pd	Power distance
PfP	Partnership for Peace
PRISM	Performance, Role interdependence, Information Sharing Model
PRTs	Provincial Reconstruction Teams
RMA	Royal Military Academy
RSY	RTO Symposium
RTA	NATO Research and Technology Agency
RTB	NATO Research and Technology Board
RTG	RTO Task Group
RTO	NATO Research and Technology Organization
SAS	NATO RTO System Analysis and Studies Panel
SEA	Systems Engineering and Assessment Ltd.
SFOR	NATO Stabilization Force
SMEs	Subject-Matter Experts
SOPs	Standing Operating Procedures
SWOS	U.S. Surface Warfare Officers' School
TNO	Defence, Security Safety Netherlands

Acknowledgements

National support for research personnel contributions was provided by the following nations and NATO ex-officio bodies: Belgium, Bulgaria, Canada, Israel, Netherlands, Norway, Slovenia, Sweden, Switzerland, the United States, the United Kingdom, NATO School and NATO Allied Command Transformation. In addition, NATO Research and Technology Agency, NATO Allied Command Transformation, NATO School, NATO Defence College and the following nations graciously hosted meetings: Belgium, Canada, Israel and the United States. The NATO Research and Technology Organization (RTO) provided support for identifying and advising Alliance and partner nation's scientists interested in contributing their time and energy to studying organizational effectiveness in coalition operations. Financial support for data collection at the Novo Selo Training Range in Bulgaria was also provided by the NATO Research and Technology Agency (RTA). The NATO RTA provided administrative guidance as well as meeting facilities, as needed. The support received from these nations and entities contributed significantly to the ability of HFM-163 Research Task Group (RTG) to meet objectives.

A special thank you is extended to Lieutenant General Markus Bentler (German Army) and Major General Erhard Bühler (German Army), Commanders, Kosovo Force (KFOR) and BG Wilton Gorske (U.S. Army) – KFOR Chief of Staff as well as the command staff at KFOR for participating in interviews and sharing their valuable time with HFM-163/RTG data collectors. LtCol. Imre Mata (Hungarian Army) and Mr. Imre Madar (Hungarian Civilian) were instrumental in organizing our data collection and accommodations at HQ KFOR. For the excellent job they did in transcribing the interviews, we recognize Samuel Buehlman and Marc Blum, soldiers in the Swiss militia. For helping kick-off our project with a panel of subject matter experts at the NATO School Oberammergau, we respectfully extend a thank you to Col. Mark Baines (U.S. Army), Commandant and Col. William Woodcock (U.S. Air Force), Dean. We would like to thank also Captain (NOR Navy) Hans Christian Helseth for his useful comments on the manuscript. Finally, we thank Dr. Peter Essens for participation in the first two HFM-163/RTG meetings and being our insightful mentor.

We need to express a particular appreciation for the kind support of our colleagues from U.S. DEOMI – Dr. Daniel McDonald, Mr. Jerry Scarpate, and Joleen S. Horton in proof-reading and formatting the report.

Last but not least, we express our appreciation for the support provided by Lieutenant-Colonel Ron Verkerk (Royal Netherlands Army) HFM Panel Executive and Mrs. Danielle Pelat (French Civilian) for project implementation.

The views, opinions, and/or findings contained in the final report are those of the authors and should not be construed as an official NATO Research Technology Organization or Allied Command Transformation position, policy, or decision, unless so designated by other official documentation. Nor should the views, opinions, and/or findings contained in the report be construed as an official position, policy, or decision of the participating Nations.

HFM-163 Membership List

CHAIRMAN

Capt. (BGR-N) Prof. Yantsislav YANAKIEV
D.Sc. Director of Defence Advanced Research Institute (DARI)
G.S. Rakovski National Defence Academy
82 Evlogi & Hristo Georgievi Blvd
1504 Sofia
BULGARIA
Tel: +359 (2) 92 26538 / Fax: +359 2 9441657 / Mobile: +359 2 498977
Email: yanakiev@md.government.bg / yanakiev@pims.org

MEMBERS

BELGIUM

Dr. Delphine RESTEIGNE*
Royal Military Academy (RMA)
Avenue de la Renaissance 30
1000 Brussels
Tel: +32 2 742 66 13
Fax: +32 2 742 66 12
Email: Delphine.Resteigne@rma.ac.be

Mr. Sigmund VALAKER*
Norwegian Defence Research Establishment
(FFI)
P.O. Box 25
2027 Kjeller
Tel: +47 63 80 77 46
Fax: +47 63 80 72 12
Email: Sigmund.Valaker@ffi.no

CANADA

Dr. Ann-Renee BLAIS*
Collaborative Performance and Learning Section
Defence R&D Canada Toronto
1133 Sheppard Avenue West
P.O. Box 2000, Toronto Ontario M3M 3B9
Tel: +1 416-635-2000 x3082
Fax: +1 416-635-2191
Email: ann-renee.blais@drdc-rddc.gc.ca

SLOVENIA

Ms. Janja VUGA*
University of Ljubljana
Faculty of Social Sciences
1000 Ljubljana
Trzaska 25
Tel: +386 15805 225
Fax: +386 15805 101
Email: janja.vuga@fdv.uni-lj.si

NETHERLANDS

Ms. Tineke HOF*
TNO Defence, Security Safety
P.O. Box 23, 3769 ZG Soesterberg
Tel: +31 346 356 407
Fax: +31 346 353 977
Email: tineke.hof@tno.nl

SWEDEN

Ms. Magdalena GRANASEN*
Swedish Defence Research Agency (FOI)
P.O. Box 1165
SE-58111 Linköping
Tel: +46 70 9277145
Fax: +46 13 124938
Email: magdalena.granasen@foi.se

NORWAY

Ms. Anne-Lise BJORNSTAD
Norwegian Defence Research Establishment (FFI)
P.O. Box 25, 2027 Kjeller
Tel: +47 63 80 77 46
Fax: +47 63 80 72 12
Email: anne-lise.bjornstad@ffi.no

Ms. Jenny MARKLUND
Swedish Defence Research Agency (FOI)
Gullfossgatan 6
SE-164 40 Kista
Tel: +46 70 9277476
Fax: +46 8 555 038 66
Email: jenny.marklund@foi.se

* National Point of Contact

SWEDEN (cont'd)

Dr. Per WIKBERG
Swedish Defence Research Agency (FOI)
Cementvägen 20, SE-90182 Umeå
Tel: +46 70 9277037
Fax: +46 90 10 68 00
Email: per.wikberg@foi.se

Dr. Erland SVENSSON
Swedish Defence Research Agency (FOI)
P.O. Box 1165, SE-58111 Linköping
Tel: +46 13 378181
Fax: +46 13 124938
Email: erland.svensson@foi.se

SWITZERLAND

Dr. Tibor SZVIRCSEV TRESCH*
Swiss Armed Forces
Military Sociology at the Swiss Military
Academy at ETH Zurich
Casern Reppischtal, 8903 Birmensdorf
Tel: +41 44 739 82 32
Fax: +41 44 739 82 00
Email: tibor.szvircsev@vtg.admin.ch

Dr. Stefan SEILER
Swiss Armed Forces
Leadership and Communication Studies at the
Swiss Military Academy at ETH Zurich
Casern Reppischtal, 8903 Birmensdorf
Tel: +41 44 739 82 35
Fax: +41 44 739 82 00
Email: sseiler@ethz.ch

Ms. Esther BISIG
Swiss Armed Forces
Military Sociology at the Swiss Military
Academy at ETH Zurich
Casern Reppischtal, 8903 Birmensdorf
Tel: +41 44 739 82 71
Fax: +41 44 739 82 00
Email: Esther.Bisig@vtg.admin.ch

UNITED KINGDOM

Dr. Georgina FLETCHER*
Systems Engineering and Assessment Ltd. (SEA)
SE House Bristol Business Park
Coldharbour Lake
Bristol BS16 1EJ
Tel: +44 1373 852 314
Fax: +44 1179 691 177
Email: Georgina.Fletcher@sea.co.uk

* National Point of Contact

UNITED STATES

Dr. Janet SUTTON*
U.S. Air Force Research Laboratory (AFRL)
711 Human Performance Wing Human
Effectiveness, Cognitive Systems Branch
Wright-Patterson AFB, OH 45433
Tel: +1 937-656-4316
Fax: +1 937-255-6555
Email: janet.sutton@wpafb.af.mil

Dr. Joseph LYONS
Program Manager AFOSR/RSL
875 N. Randolph Street, Suite 325
Arlington, VA 22203
Tel: +1 703-696-6207
Email: joseph.lyons@afosr.af.mil

Dr. Erin MOESER
Defense Equal Opportunity Management
Institute (DEOMI)
366 Tuskegee Airmen Drive
Patrick Air Force Base
FL 32925-3399
Email: Erin.Moeser.ctr@patrick.af.mil

Dr. Daniel MCDONALD
Defense Equal Opportunity Management
Institute (DEOMI)
366 Tuskegee Airmen Drive
Patrick Air Force Base, FL 32925-3399
Tel: +1 321-494-2746
Fax: +1 321-494-4116
Email: Daniel.mcdonald@patrick.af.mil

Mr. Jerry SCARPATE
Defense Equal Opportunity Management
Institute (DEOMI)
366 Tuskegee Airmen Drive
Patrick Air Force Base, FL 32925-3399
Tel: +1 321-494-2676
Fax: +1 321-494-4116
Email: Jerry.scarpate@patrick.af.mil

Dr. Linda PIERCE
US Army Research Institute for the Behavioural
and Social Sciences (ARI)
Bldg 520, Room 27, Aberdeen Proving Ground
MD 21005-5425
Tel: +1 410-278-5967
Fax: +1 410-278-3587
Email: linda.pierce@us.army.mil

UNITED STATES (cont'd)

Dr. Carol PARIS
Naval Air Systems Command (NAVAIR)
12350 Research Parkway
Orlando, FL 32826-3275
Tel: +1 407-380-4768
Fax: +1 407-380-4110
Email: Carol.paris@navy.mil

NATO SCHOOL

Ms. Liliana SERBAN*
NATO School
Am Rainenbichl 54
82487 Oberammergau
GERMANY
Tel: +49 8822 9481 2604
Fax: +49 8222 9171 2604
Email: SERBAN.Lilian@natoschool.nato.int

* National Point of Contact

DATES AND PLACES OF NATO HFM RTG 163 MEETINGS

- 23-25 January 2008, Research and Technology Agency HQ, Paris, France
- 22-24 October 2008, NATO School, Oberammergau, Germany
- 7-9 June 2009, NATO ACT, Norfolk, VA, USA
- 27-29 October 2009, National Defence College, Tel Aviv, Israel
- 7-10 June 2010, Defence Research and Development (DRDC), Ottawa, Canada
- 10-15 October 2010, Field trip for data collection, KFOR HQ, Pristine, Kosovo
- 8-11 November 2010, NATO Defence College, Rome, Italy
- 7-9 March 2011, Defense Equal Opportunity Management Institute (DEOMI), Patrick AFB, Florida, USA
- 29-31 August 2011, Royal Military Academy, Brussels, Belgium

REPORT DOCUMENTATION PAGE																								
1. Recipient's Reference	2. Originator's References	3. Further Reference	4. Security Classification of Document																					
	RTO-TR-HFM-163 AC/323(HFM-163)TP/476	ISBN 978-92-837-0175-0	UNCLASSIFIED/ UNLIMITED																					
5. Originator	Science and Technology Organisation North Atlantic Treaty Organisation BP 25, F-92201 Neuilly-sur-Seine Cedex, France																							
6. Title	Improving the Organisational Effectiveness of Coalition Operations																							
7. Descriptive Text	This document is the Final Report of RTO Task Group HFM-163.																							
8. Author(s)/Editor(s)	Y. Yanakiev and J.S. Horton		9. Date November 2012																					
10. Author's/Editor's Address	Multiple		11. Pages 174																					
12. Distribution Statement	There are no restrictions on the distribution of this document. Information about the availability of this and other STO unclassified publications is given on the back cover.																							
13. Keywords/Descriptors	<table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Coalition operations</td> <td style="width: 33%;">Multi-national coalitions</td> <td style="width: 33%;">Organisational effectiveness</td> </tr> <tr> <td>Coalition teamwork</td> <td>Multi-national operations</td> <td>Organizational culture</td> </tr> <tr> <td>Cultural awareness</td> <td>Multi-nationality</td> <td>Shared awareness</td> </tr> <tr> <td>Decision making</td> <td>Network-enabled capabilities</td> <td>Sharing of information</td> </tr> <tr> <td>Diversity</td> <td>Non-Article 5 Crisis Response</td> <td>Training</td> </tr> <tr> <td>Human performance improvement</td> <td>Operations</td> <td>Trust</td> </tr> <tr> <td>Leadership</td> <td>Operational effectiveness</td> <td></td> </tr> </table>			Coalition operations	Multi-national coalitions	Organisational effectiveness	Coalition teamwork	Multi-national operations	Organizational culture	Cultural awareness	Multi-nationality	Shared awareness	Decision making	Network-enabled capabilities	Sharing of information	Diversity	Non-Article 5 Crisis Response	Training	Human performance improvement	Operations	Trust	Leadership	Operational effectiveness	
Coalition operations	Multi-national coalitions	Organisational effectiveness																						
Coalition teamwork	Multi-national operations	Organizational culture																						
Cultural awareness	Multi-nationality	Shared awareness																						
Decision making	Network-enabled capabilities	Sharing of information																						
Diversity	Non-Article 5 Crisis Response	Training																						
Human performance improvement	Operations	Trust																						
Leadership	Operational effectiveness																							
14. Abstract	<p>The NATO Research and Technology Organization (RTO) Human Factors and Medicine (HFM) Panel Task Group (RTG) – 163 titled “Improving the Organisational Effectiveness of Coalition Operations” was established to identify organisational and cultural factors critical to effective cooperation in coalition operations with particular focus on organisational effectiveness of NATO operational level Headquarters (HQs). More precisely, the goals of the HFM-163 – RTG were:</p> <p>1) To identify critical factors to effective coalition operations (e.g., leadership, national culture, organizational culture/structure, information sharing) using extant data and research literature;</p> <p>2) To investigate potential models and tools for understanding, explaining, and measuring different aspects of effective adaptation and cooperation in multi-national coalitions; 3) To make recommendations regarding improvement of education and training of NATO and partner countries’ militaries for coalition operations.</p>																							





BP 25
F-92201 NEUILLY-SUR-SEINE CEDEX • FRANCE
Télécopie 0(1)55.61.22.99 • E-mail mailbox@rta.nato.int



DIFFUSION DES PUBLICATIONS
STO NON CLASSIFIEES

Les publications de l'AGARD et de la STO peuvent parfois être obtenues auprès des centres nationaux de distribution indiqués ci-dessous. Si vous souhaitez recevoir toutes les publications de la STO, ou simplement celles qui concernent certains Panels, vous pouvez demander d'être inclus soit à titre personnel, soit au nom de votre organisation, sur la liste d'envoi.

Les publications de la STO et de l'AGARD sont également en vente auprès des agences de vente indiquées ci-dessous.

Les demandes de documents STO ou AGARD doivent comporter la dénomination « STO » ou « AGARD » selon le cas, suivi du numéro de série. Des informations analogues, telles que le titre et la date de publication sont souhaitables.

Si vous souhaitez recevoir une notification électronique de la disponibilité des rapports de la STO au fur et à mesure de leur publication, vous pouvez consulter notre site Web (<http://www.sto.nato.int/>) et vous abonner à ce service.

CENTRES DE DIFFUSION NATIONAUX

ALLEMAGNE

Streitkräfteamt / Abteilung III
Fachinformationszentrum der Bundeswehr (FIZBw)
Gorch-Fock-Straße 7, D-53229 Bonn

BELGIQUE

Royal High Institute for Defence – KHID/IRSD/RHID
Management of Scientific & Technological Research
for Defence, National STO Coordinator
Royal Military Academy – Campus Renaissance
Renaissancelaan 30, 1000 Bruxelles

CANADA

DSIGRD2 – Bibliothécaire des ressources du savoir
R et D pour la défense Canada
Ministère de la Défense nationale
305, rue Rideau, 9^e étage
Ottawa, Ontario K1A 0K2

DANEMARK

Danish Acquisition and Logistics Organization (DALO)
Lautrupbjerg 1-5, 2750 Ballerup

ESPAGNE

SDG TECIN / DGAM
C/ Arturo Soria 289
Madrid 28033

ESTONIE

Estonian Ministry of Defence
Estonian National Coordinator for NATO STO
Sakala 1, Tallinn 15094

ETATS-UNIS

NASA Center for AeroSpace Information (CASI)
7115 Standard Drive
Hanover, MD 21076-1320

FRANCE

O.N.E.R.A. (ISP)
29, Avenue de la Division Leclerc
BP 72, 92322 Châtillon Cedex

GRECE (Correspondant)

Defence Industry & Research General
Directorate, Research Directorate
Fakinos Base Camp, S.T.G. 1020
Holargos, Athens

HONGRIE

Hungarian Ministry of Defence
Development and Logistics Agency
P.O.B. 25, H-1885 Budapest

ITALIE

General Secretariat of Defence and
National Armaments Directorate
5th Department – Technological
Research
Via XX Settembre 123, 00187 Roma

LUXEMBOURG

Voir Belgique

NORVEGE

Norwegian Defence Research
Establishment, Attn: Biblioteket
P.O. Box 25
NO-2007 Kjeller

PAYS-BAS

Royal Netherlands Military
Academy Library
P.O. Box 90.002
4800 PA Breda

POLOGNE

Centralna Biblioteka Wojskowa
ul. Ostrobramska 109
04-041 Warszawa

PORTUGAL

Estado Maior da Força Aérea
SDFa – Centro de Documentação
Alfragide, P-2720 Amadora

REPUBLIQUE TCHEQUE

LOM PRAHA s. p.
o. z. VTÚLaPVO
Mladoboleslavská 944
PO Box 18
197 21 Praha 9

ROUMANIE

Romanian National Distribution
Centre
Armaments Department
9-11, Drumul Taberei Street
Sector 6
061353, Bucharest

ROYAUME-UNI

Dstl Knowledge and Information
Services
Building 247
Porton Down
Salisbury SP4 0JQ

SLOVAQUIE

Akadémia ozbrojených síl gen.
M.R. Štefánika, Distribučné a
informačné stredisko STO
Demänová 393, Liptovský Mikuláš 6
031 06

SLOVENIE

Ministry of Defence
Central Registry for EU and
NATO
Vojkova 55
1000 Ljubljana

TURQUIE

Milli Savunma Bakanlığı (MSB)
ARGE ve Teknoloji Dairesi
Başkanlığı
06650 Bakanlıklar
Ankara

AGENCES DE VENTE

**NASA Center for AeroSpace
Information (CASI)**
7115 Standard Drive
Hanover, MD 21076-1320
ETATS-UNIS

**The British Library Document
Supply Centre**
Boston Spa, Wetherby
West Yorkshire LS23 7BQ
ROYAUME-UNI

**Canada Institute for Scientific and
Technical Information (CISTI)**
National Research Council Acquisitions
Montreal Road, Building M-55
Ottawa K1A 0S2, CANADA

Les demandes de documents STO ou AGARD doivent comporter la dénomination « STO » ou « AGARD » selon le cas, suivie du numéro de série (par exemple AGARD-AG-315). Des informations analogues, telles que le titre et la date de publication sont souhaitables. Des références bibliographiques complètes ainsi que des résumés des publications STO et AGARD figurent dans le « NTIS Publications Database » (<http://www.ntis.gov>).



BP 25

F-92201 NEUILLY-SUR-SEINE CEDEX • FRANCE
Télécopie 0(1)55.61.22.99 • E-mail mailbox@rt.a.nato.int



**DISTRIBUTION OF UNCLASSIFIED
STO PUBLICATIONS**

AGARD & STO publications are sometimes available from the National Distribution Centres listed below. If you wish to receive all STO reports, or just those relating to one or more specific STO Panels, they may be willing to include you (or your Organisation) in their distribution.

STO and AGARD reports may also be purchased from the Sales Agencies listed below.

Requests for STO or AGARD documents should include the word 'STO' or 'AGARD', as appropriate, followed by the serial number. Collateral information such as title and publication date is desirable.

If you wish to receive electronic notification of STO reports as they are published, please visit our website (<http://www.sto.nato.int/>) from where you can register for this service.

NATIONAL DISTRIBUTION CENTRES

BELGIUM

Royal High Institute for Defence – KHID/IRSD/RHID
Management of Scientific & Technological Research
for Defence, National STO Coordinator
Royal Military Academy – Campus Renaissance
Renaissancelaan 30
1000 Brussels

CANADA

DRDKIM2 – Knowledge Resources Librarian
Defence R&D Canada
Department of National Defence
305 Rideau Street, 9th Floor
Ottawa, Ontario K1A 0K2

CZECH REPUBLIC

LOM PRAHA s. p.
o. z. VTÚLaPVO
Mladoboleslavská 944
PO Box 18
197 21 Praha 9

DENMARK

Danish Acquisition and Logistics Organization
(DALO)
Lautrupbjerg 1-5
2750 Ballerup

ESTONIA

Estonian Ministry of Defence
Estonian National Coordinator for NATO STO
Sakala 1, Tallinn 15094

FRANCE

O.N.E.R.A. (ISP)
29, Avenue de la Division Leclerc
BP 72, 92322 Châtillon Cedex

GERMANY

Streitkräfteamt / Abteilung III
Fachinformationszentrum der Bundeswehr (FIZBw)
Gorch-Fock-Straße 7
D-53229 Bonn

GREECE (Point of Contact)

Defence Industry & Research General
Directorate, Research Directorate
Fakinos Base Camp, S.T.G. 1020
Holargos, Athens

HUNGARY

Hungarian Ministry of Defence
Development and Logistics Agency
P.O.B. 25, H-1885 Budapest

ITALY

General Secretariat of Defence and
National Armaments Directorate
5th Department – Technological
Research
Via XX Settembre 123, 00187 Roma

LUXEMBOURG

See Belgium

NETHERLANDS

Royal Netherlands Military
Academy Library
P.O. Box 90.002
4800 PA Breda

NORWAY

Norwegian Defence Research
Establishment, Attn: Biblioteket
P.O. Box 25
NO-2007 Kjeller

POLAND

Centralna Biblioteka Wojskowa
ul. Ostrobramska 109
04-041 Warszawa

PORTUGAL

Estado Maior da Força Aérea
SDFa – Centro de Documentação
Alfragide, P-2720 Amadora

ROMANIA

Romanian National Distribution
Centre
Armaments Department
9-11, Drumul Taberei Street
Sector 6, 061353, Bucharest

SLOVAKIA

Akadémia ozbrojených síl gen.
M.R. Štefánika, Distribučné a
informačné stredisko STO
Demánová 393, Liptovský Mikuláš 6
031 06

SLOVENIA

Ministry of Defence
Central Registry for EU & NATO
Vojkova 55
1000 Ljubljana

SPAIN

SDG TECIN / DGAM
C/ Arturo Soria 289
Madrid 28033

TURKEY

Milli Savunma Bakanlığı (MSB)
ARGE ve Teknoloji Dairesi
Başkanlığı
06650 Bakanlıklar – Ankara

UNITED KINGDOM

Dstl Knowledge and Information
Services
Building 247
Porton Down
Salisbury SP4 0JQ

UNITED STATES

NASA Center for AeroSpace
Information (CASI)
7115 Standard Drive
Hanover, MD 21076-1320

SALES AGENCIES

**NASA Center for AeroSpace
Information (CASI)**
7115 Standard Drive
Hanover, MD 21076-1320
UNITED STATES

**The British Library Document
Supply Centre**
Boston Spa, Wetherby
West Yorkshire LS23 7BQ
UNITED KINGDOM

**Canada Institute for Scientific and
Technical Information (CISTI)**
National Research Council Acquisitions
Montreal Road, Building M-55
Ottawa K1A 0S2, CANADA

Requests for STO or AGARD documents should include the word 'STO' or 'AGARD', as appropriate, followed by the serial number (for example AGARD-AG-315). Collateral information such as title and publication date is desirable. Full bibliographical references and abstracts of STO and AGARD publications are given in "NTIS Publications Database" (<http://www.ntis.gov>).