



ПРОГРАМА

**МЕЖДУНАРОДНА
НАУЧНА КОНФЕРЕНЦИЯ**

*СЪВРЕМЕННИ ИЗСЛЕДВАНИЯ
И ТЕХНОЛОГИИ ЗА ОТБРАНАТА*

ARTDef – 2021

**29^{-ТИ} и 30^{-ТИ} ЮНИ 2021 Г.
ВВМУ "Н. Й. ВАПЦАРОВ"
ВАРНА**

PROGRAMME

**INTERNATIONAL
CONFERENCE**

*ADVANCED RESEARCH AND
TECHNOLOGY FOR DEFENCE*

ARTDef – 2021

**29 and 30 JUNE 2021
NIKOLA VAPTSAROV
NAVAL ACADEMY
VARNA**

PROGRAMME OF THE CONFERENCE

June 29 (TUESDAY)

08.30 - 09.30 REGISTRATION

09.30 - 09.35 CONFERENCE OPENING

Flotilla Admiral Professor DSc. Boyan MEDNIKAROV,
Rector-commandant of Nikola Vaptsarov Naval Academy

09.35 - 10.00 *Kick off report of Assoc. Prof. Dr. Zlatogor MINCHEV, Head of the Section "Information Technologies in Security" at the Institute of Information and Communication Technologies - BAS*

10.00 - 10.30 *Kick off report of Flotilla Admiral Professor DSc. Boyan MEDNIKAROV, Rector-commandant of Nikola Vaptsarov Naval Academy*

10.30 - 10.45 COFFEE BREAK

10.45 - 12.45 Military-technological exhibition and presentation of the research base of Nikola Vaptsarov Naval Academy

12.45 - 14.00 LUNCH

14.00 - 15.15 WORK ON SCIENTIFIC SECTIONS

15.15 - 15.30 COFFEE BREAK

15.30 - 17.00 WORK ON SCIENTIFIC SECTIONS

17.15 - 18.00 POSTER SESSION

19.00 - 21.00 DINNER

June 30 (WEDNESDAY)

09.30 - 10.30 WORK ON SCIENTIFIC SECTIONS

10.00 - 13.00 ROUND TABLE ON THE TOPIC "PERSPECTIVES FOR THE MILITARY EDUCATION DEVELOPMENT" (held in parallel with the work on scientific sections)

10.30 - 10.45 COFFEE BREAK

10.45 - 13.00 WORK ON SCIENTIFIC SECTIONS

13.00 - 14.00 LUNCH

14.00 - 14.10 CONFERENCE CLOSURE

**Session "RESEARCH,
DEFENCE SYSTEMS AND TECHNOLOGIES"**

JUNE 29 2021 (TUESDAY)

Panel 1 "WEAPONS, COMBAT SYSTEMS AND TECHNOLOGIES"

(Planetarium)

Moderator: *Assoc. Prof. Dr. V. Vasilev*

14.00 - 15.15 WORK ON SCIENTIFIC SECTIONS

MULTIFUNCTIONAL WORKING-TRANSPORT SELF PROPELLED
PLATFORM TRW-16

Ivan N. Ivanov

TOOLS AND METHODS IN THE OPERATION PLANNING
PROCESS

Danko D. Farazov

IRAN – A BRIEF OVERVIEW

Aleksandar K. Grizhev, Zoran Zh. Jovanovski

IMPACT OF THE POLITICAL DYNAMICS ON THE SECURITY AND
DEFENCE SYSTEM OF THE COUNTRY

Verginiya Iv. Atanasova, Plamen T. Petrov

15.15 - 15.30 COFFEE BREAK

15.30 - 17.00 WORK ON SCIENTIFIC SECTIONS

MATHEMATICAL MODELLING OF A BLOWBACK WITH A GAS-
DYNAMIC BRAKE FOR SELF-LOADING FIREARMS

Antoniya Raydovska

PROVIDING SPECIAL OPERATIONS BY UNMANNED AIRCRAFT
SYSTEMS

Hristo A. Georgiev

AIRSTRIKE SYSTEM FUNCTIONAL DESIGN AND QUALITY
CRITERIA STUDY

Andon P. Andonov

HIGH MOLECULAR COMPOUNDS TREATED WITH GRAPHEN
OXIDE INTENDED FOR THE CREATION OF BODY ARMOR

PROTECTION

Tsvetanka J. Hristova, Petya V. Nedyalkova, Dimitar A. Kirkov

CONCEPT OF GREEN ENERGETIC MATERIALS AND TRENDS IN THEIR RESEARCH AND DEVELOPMENT

Nadejda D. Jeleva

Panel 2 "COMMUNICATION AND INFORMATION SYSTEMS AND TECHNOLOGIES, CYBER SECURITY"

(Cyber Operations Center)

Moderator: *Assoc. Prof. Dr. J. Nikolov*

14.00 - 15.15 WORK ON SCIENTIFIC SECTIONS

ASSESSMENT AND COMPARATIVE ANALYSIS OF CRISIS SITUATIONS CAUSED BY FLOODS IN THE MUNICIPALITY OF V.TARNOVO WHEN PLAYING SCENARIOS THROUGH SIMULATION MODELING

Iliyan N. Lilov, Svilen E. Stefanov, Tihomir E. Yotkov

APPROACH TO REDUCE THE RISK FOR INFORMATION RESOURCES IN CoC QUASAR BY USING SERVER CLUSTERS AND VIRTUALIZATION

Borislav M. Nikolov

ANALYSIS OF FUNCTIONALITIES AND VULNERABILITIES OF WEB-BASED INFORMATION SYSTEMS

Evgeni Hr. Andreev, Mariya P. Nikolova

CAPABILITIES OF VIRTUAL BATTLESPACE PLATFORM FOR MODELING AND SIMULATIONS IN A RISK MANAGEMENT ENVIRONMENT AS A PART OF CENTER OF COMPETENCE "QUANTUM COMMUNICATION, INTELLIGENT SECURITY SYSTEM AND RISK MANAGEMENT" (QUASAR)

Nikoleta G. Georgieva

14.00 - 15.15 COFFEE BREAK

15.30 - 17.00 WORK ON SCIENTIFIC SECTIONS

AN APPROACH FOR MULTI-CRITERIA DECISION MAKING
Valentina M. Petrova

EVOLUTION OF RADAR
Mirolyub Tsekov, Nataliya Marinova

RISK, AS A SCIENTIFIC CATEGORY RELATED TO MARITIME SECURITY
Nikola Stoianov

IT INCIDENT INITIAL RESPONSE STRATEGY
Vasil O. Slavyanov

COMPARISON BETWEEN SOLID PROGRAMMABLE FILTERS AND NEURAL NETWORKS IN RADAR SYSTEMS DATA PROCESSING
Kostadin Lazarov

ANALYSIS OF THE PUBLIC COMMUNICATION APPLICATIONS WITH POSSIBILITIES FOR TRANSMISSION OF HIDDEN INFORMATION
Veselka T. Stoyanova

Panel 3 „**DIGITAL TRANSFORMATION AND SECURITY CHALLENGES**”
(*Conference Hall*)

Moderator: *Assoc. Prof. Dr. Zlatogor Minchev*

14.00 - 17.00 WORK ON SCIENTIFIC SECTIONS

WELCOME ADDRESS
by the Chair & Co-chair Zlatogor Minchev & Kalin Kalinov, Bulgaria

THE WORLD HAS CHANGED AND SO MUST WE – A SOCIO-TECHNOLOGICAL OUTLOOK TO THE FUTURE
Galit Ben-Israel, Israel

INTEGRATING HUMAN BEHAVIOR INTO THE DEVELOPMENT OF FUTURE CYBER TERRORISM SCENARIOS
Max Kilger, USA

CRITICAL SPACE INFRASTRUCTURES – A NEW FRONTIER FOR SECURITY
Alexandru Georgescu, Romania

BULGARIAN NATIONAL COMPETENCE CENTRE IN HPC/HPDA/AI
Aneta Karaivanova, Bulgaria

MENTAL & PHYSICAL CHALLENGES IN THE POST COVID-19
DIGITAL ERA
Zornitza Mladenova, Bulgaria

SCADA SECURITY & CYBER INTELLIGENCE
Selene Giupponi, Italy

DIGITAL TRANSFORMATION FUTURE SECURITY
TRANSCENDENTS (WRAP-UP DISCUSSION)
Zlatogor Minchev, Bulgaria

Panel 4 „WEAPONS, COMBAT SYSTEMS AND TECHNOLOGIES”

(Hall 11)

Moderator: *Assoc. Prof. Dr. Iliyan Iliev*

14.00 - 15.15 WORK ON SCIENTIFIC SECTIONS

INNOVATIVE POLYMER BONDED EXPLOSIVES: BEYOND THE
THERMOBARIC COMPOSITIONS
Stefan K. Kolev, Tsvetomir T. Tsonev

WEAPONERING PROCESS APPLICATION IN THE AIR TASKING
CYCLE
Andon P. Andonov

SYSTEMIC APPROACH TO THE CONCEPT OF AVIATION SYSTEM
Svetlozar M. Asenov, Zlatko Hr. Zlatev

INTERNATIONAL SPACE DISASTER MONITORING SYSTEM
Nikolay P. Zagorski

15.15 - 15.30 COFFEE BREAK

15.30 - 17.00 WORK ON SCIENTIFIC SECTIONS

POSSIBILITIES FOR ESTABLISHING OF RADIO ELECTRONIC
PROTECTION OF UNMANNED AERIAL VEHICLES
Georgi St. Sotirov, Svetlozar M. Asenov

BALLISTIC TESTS PROCEDURE OF SOLID ROCKET
PROPELLANTS ON GUIDED MISSILES

Dilyan N. Nedelchev

CRISES AND SOME POSIBILITIES FOR THEIR SUCSESFUL
MANAGEMENT

Valeri V. Ivanov, Anton I. Manchev

DIGITAL APPLICATION OF POSTER TECHNIQUES

Boris Tsenov

**Panel 5 "COMMUNICATION AND INFORMATION SYSTEMS AND TECHNOLOGIES,
CYBER SECURITY"**

(Hall 12)

Moderator: *Assoc. Prof. Dr. Nikolai Kolev*

14.00 - 15.15 WORK ON SCIENTIFIC SECTIONS

„PHANTOM NETWORKS“ – ESSENCE AND CHALLENGES FOR
THEIR CONSTRUCTION

Iliyan Tsv. Angelov

USING THE ANALYTICAL HIERARCHY PROCESS
FOR ASSESSING CYBER SECURITY

Valentina M. Petrova

MODERN TECHNOLOGIES IN COMMAND AND MANAGEMENT

Milen I. Ivanov

NIKOLA VAPTSAROV NAVAL ACADEMY'S MARITIME SECURITY
ACTIVITY IN VIRTUAL AND PHYSICAL ENVIRONMENT

Yuliyani I. Tsonev, Andon D. Lazarov

15.15 - 15.30 COFFEE BREAK

15.30 - 17.00 WORK ON SCIENTIFIC SECTIONS

OPTIONS FOR INTERACTION IN CYBERSECURITY INCIDENTS

Krasimir O. Slavyanov

ANALYSIS OF THE POSSIBILITIES FOR ACQUISITION,
PROCESSING AND PROVISION OF INFORMATION BY A SENSORY
MOBILE KIT IN THE INTEGRATED ENVIRONMENT OF A
COMPETENCE CENTER"QUANTUM COMMUNICATIONS, SMART
SECURITY AND RISK MANAGEMENT"

Veselin Ev. Atanasov

ANALYSIS OF SOFTWARE TOOLS FOR COLLABORATION

Kristina L. Ignatova, Rosen S. Iliev

APPROACH IN THE PREPARATION OF INNOVATIVE CURRICULA
FOR THE EC'S FORESIGHT PROJECT

Pencho M. Vasilev, Nikolai T. Stoianov, Tsvetelin Iv. Tsonev

MODELING OF WIRELESS DIGITAL NETWORK WITH
ORTHOGONAL MODULATION IN URBAN CONDITIONS

Ivan P. Ivanov, Alexander A. Kolev

Session "**MILITARY-POLITICAL AND SOCIAL
RESEARCH, HUMAN FACTOR AND MEDICINE**"

JUNE 30 2021 (WEDNESDAY)

**Panel 1 "MILITARY-POLITICAL, SOCIAL AND
ECONOMIC ASPECTS OF DEFENCE"**

(Cyber Operations Center)

Moderators: *Prof. DSc. Yantsislav Yanakiev, Assoc. Prof. Dr. V. Vasilev*

09.30 - 10.30 WORK ON SCIENTIFIC SECTIONS

Kick off report of Prof. Dr. Sc. Yantsislav Yanakiev
STRENGTHENING SOCIAL RESILIENCE AS A MEANS OF
PROTECTION AGAINST HYBRID THREATS

TOOL FOR ANALYTICAL ACTIVITY AND RECOGNITION OF
FAKE NEWS IN THE SOCIAL NETWORKS OF THE
BULGARIAN INTERNET SPACE

Petko S. Dimov

THE CONFLICTS IN THE AGE OF ARTIFICIAL INTELLIGENCE
AND NUCLEAR WEAPONS

Erol S. Buyukliev

WHY DO WE HAVE A PHENOMENON CALLED WAR?:
THEORETICAL ANALYSIS

Hristina N. Dobрева

10.30 - 10.45 COFFEE BREAK

10.45 - 13.00 WORK ON SCIENTIFIC SECTIONS

SPECIFIC FEATURES AND PROBLEMS IN THE FINANCING
OF THE NATIONAL MILITARY UNIVERSITY "VASIL LEVSKI"

Boryana T. Varbanova

CHALLENGES TO THE MILITARY EDUCATION SYSTEM IN
THE CONTEXT OF THE "EDUCATION-SCIENCE-BUSINESS"
TRIMMER

Sevdalina I. Dimitrova

EFFECTIVE COMMUNICATION IN THE MILITARY
ORGANIZATION - INTERCONNECTION BETWEEN
KNOWLEDGE, COMPETENCES AND ETHICS

Valya M. Simeonova

DEVELOPMENT MANAGEMENT SYSTEM OF THE MINISTRY
OF DEFENCE

Maxim M. Alashki

CHARACTERISTICS OF THE LOGISTICAL SUPPORT IN THE
PLACES OF ACCOMMODATION OF REFUGEES AND
MIGRANTS IN THE CONDITIONS OF REFUGEE CRISIS

Ivan Y. Danev

EUROPEAN POLICIES AND INSTRUMENTS FOR THE
TRANSFER OF PERSONAL DATA IN THIRD COUNTRIES

Hristin M. Mitev

**Panel 2 "CURRENT ASPECTS OF THE HUMANITARIAN
MEDICINE AND HEALTH MANAGEMENT"**

(Planetarium)

Moderator: *Assoc. Prof. Dr. Nikola Shopov*

09.30 - 10.30 WORK ON SCIENTIFIC SECTIONS

CHALLENGES TO THE MILITARY MEDICAL ACADEMY AS A
MEDICAL TREATMENT FACILITY RELATED TO THE CRISIS
CAUSED BY COVID-19

Ventsislav Mutafchiyski

SPREADING OF COVID-19 AMONG THE PERSONNEL OF
MILITARY HOSPITAL-SOFIA FROM THE MILITARY MEDICAL
ACADEMY

Ventsislav Mutafchiyski

SOME ASPECTS OF THE MEDICAL SUPPORT OF WOMEN
SERVICEMEN IN MILITARY OPERATIONS

Mariana V. Ivanova, Dimo I. Dimov, Ivan K. Popivanov

OUTSOURCING - ANALYSIS OF THE RISKS AND BENEFITS OF
ITS APPLICATION IN PUBLIC SECTOR HOSPITALS

Yoanna B. Terzieva, Virsavia S. Vaseva

10.30 - 10.45 COFFEE BREAK

10.45 - 13.00 WORK ON SCIENTIFIC SECTIONS

ANALYSIS OF THE MEDICAL TREATMENT ACTIVITY OF
MILITARY HOSPITAL SOFIA IN THE HANDLING THE CRISIS
CAUSED BY COVID-19

*Alexandar V. Alexandrov, Ivanka I. Alexieva, Virsavia S. Vaseva, Ivan
K. Popivanov*

THE ROLE OF PREVENTION AND SCREENING PROGRAMS FOR
REDUCING EMERGENCIES IN WOMEN IN THE ARMED FORCES
OF THE REPUBLIC OF BULGARIA

Mariana V. Ivanova, Nedyalko B. Grigorov, Ivan K. Popivanov

PREREQUISITES FOR APPLYING OUTSOURCING PRACTICES IN
THE PUBLIC SECTOR

Yoanna B. Terzieva, Virsavia S. Vaseva

STUDY OF VISUAL DISTRIBUTION OF ATTENTION
OF OPERATORS - PILOTS DURING TRAINING

Lyubomir S. Aleksiev, Zoia V. Hubenova, Deanna A. Aleksandrova

EVALUATION OF PHYSIOLOGICAL CHANGES IN HELICOPTERS
CREW IN FLIGHT

Nikola G. Shopov

**ROUND TABLE
ON THE TOPIC "PERSPECTIVES FOR
THE MILITARY EDUCATION DEVELOPMENT"**

(Conference Hall)

Moderator: Prof. Dr. Kalin Kalinov

10.00 - 13.00

TOPIC I: TRAINING ON OPERATION OF MODERN HIGH TECH
SYSTEMS IN THE FIELD OF SECURITY AND DEFENCE

TOPIC II: SCIENCE-BASED EDUCATION

POSTER SESSION

IMPERATIVES IN THE DECISION-MAKING PROCESS

Danko D. Farazov

ABOUT IMPROVEMENT OF ACTIVE SYSTEMS AND MILITARY EQUIPMENT
ON TURKEY'S AIR DEFENCE

Rumen Lakov

SPACE INTELLIGENCE SYSTEM IN CHINA

Nikolay P. Zagorski

CONDITION OF THE MILITARY-INDUSTRIAL COMPLEX OF THE REPUBLIC
OF TURKEY

Iliyan Hutov

OPERATIONS DESIGN

Danko D. Farazov

MILITARY PRESENCE OF CHINA IN SPACE

Nikolay P. Zagorski

MULTILAYER COMPOSITE STRUCTURES USED IN THE CREATION OF
BODY ARMOR PROTECTION

Tsvetanka J. Hristova, Petya V. Nedyalkova, Dimitar A. Kirkov

NEW DECOMPRESSION TABLES AND PROCEDURES FOR INSURANCE
OF DIVING ACTIVITY IN THE NAVAL FORCES OF THE REPUBLIC OF
BULGARIA

Daniel V. Todorov

APPROACH TO THE DEVELOPMENT OF COMPLEX TECHNICAL
DEFENCE PRODUCTS USING THE ALTAIR SimSolid™ SOFTWARE
PRODUCT

Victor D. Stoyanov

DESIGN OF SOFTWARE-DEFINED BPSK RADIO COMMUNICATION SYSTEM

Ivan P. Ivanov

TECHNOLOGY OF BUILDING A SYSTEM OF SYSTEMS

Petrana T. Kokudeva

A VISION FOR BUILDING A COMMUNICATION AND INFORMATION SYSTEM
FOR BATTALION BATTLE GROUP

Mario S. Angelov

ADVANTAGES AND APPLICATIONS OF MIMO TECHNOLOGY IN MODERN
RADAR

Karmen G. Aleksandrova, Ivan P. Ivanov

INFLUENCE OF CYBER SPACE ON THE CAPABILITIES OF THE ARMED
FORCES

Nicolai Stoianov

ARCHITECTURE FRAMEWORK FOR CYBERSECURITY IN THE ARMED
FORCES

Yana E. Kolegova- Delcheva

SOFTWARE DEFINITED RADIO AND COGNATIVE RADIO

Dimitar S. Dimov

20 YEARS ARMAMENTS POLICY

Maxim M. Alashki

FROM CAPABILITIES TO PROJECTS (ACQUISITION OF DEFENCE
CAPABILITIES THROUGH INVESTMENT PROJECTS)

Maxim M. Alashki

EFFECTIVE COMMUNICATION IN THE MILITARY ORGANIZATION -
INTERCONNECTION BETWEEN KNOWLEDGE, COMPETENCES AND ETHICS

Valya M. Simeonova