



**Program**  
**of the 1st International Workshop on**  
**Computational & Information Technologies**  
**for Risk-Informed Systems**  
**CITRisk-2020**

Kherson, Ukraine, October 15-16, 2020

***Timetable of the Workshop***

<b>Time (EET)</b>	<b>October 15<sup>th</sup> 2020</b>	<b>October 16<sup>th</sup> 2020</b>
10.00-11.20		<b>Session 3.</b> <b><i>Talk 1</i></b>
11.20-11.40		Coffee Break
11.40-13.00		<b>Session 2.</b> <b><i>Talk 2</i></b>
13.00-14.00	<b><i>Welcome and Invited Session</i></b>	Lunch time
14.00-15.20	<b>Session 1.</b> <b><i>Talk 1</i></b>	<b>Session 1.</b> <b><i>Talk 2</i></b>
15.20-15.40	Coffee Break	Coffee Break
15.40-17.00	<b>Session 2.</b> <b><i>Talk 1</i></b>	<b>Session 3.</b> <b><i>Talk 2</i></b>
17.00-17.30		<b><i>Close Session</i></b>
17.30-17.50		

**Session 1.** Computational Models and Methods for Risk-Informed Systems  
**Session 2.** Intelligent Information Technologies for Risk-Informed Systems  
**Session 3.** Information Technologies for Diagnostic, Modeling, and Monitoring  
of Crisis and Disaster Situations

**Presentation timing for the session talks – 12-15 minutes + 5 minutes Q&A.**

**Presenters of the papers are bolded and underlined within the Sessions Schedules**

**Google Meet Link: <https://meet.google.com/woq-ypym-woa>**

### **Welcome and Invited Session**

	<i><b>Schedule</b></i>
<b>Welcome</b> <b>October 15, 2020</b> <b>13.00-13.15</b>	Prof. Volodymyr Lytvynenko, Co-Chair of the International Program Committee, and Prof. Yurii Bardachov, Rector of Kherson National Technical University <b><i>Greetings from the CITRisk-2020 Organizers</i></b>  <b><u>KEYNOTE SPEECHES</u></b>
<b>Invited presentations</b> <b>October 15, 2020</b> <b>13.20-14.00</b>	<b><u>Volodymyr Bakhrushin</u></b> , Anna Bakurova, Mariia Pasichnyk and Elina Tereschenko (Ukraine) <b><i>Risks of Data Inconsistency in Information Systems Used for Predicting the Pandemics Development</i></b>
<b>Moderators:</b> Maryna Zharikova, Volodymyr Sherstiuk	<b><u>Vira Liubchenko</u></b> (Ukraine) <b><i>Risk-Oriented Approach in Multi-Criteria Decision-Making</i></b>

## Session 1.

### Computational Models and Methods for Risk-Informed Systems

Session talks	Presentations
<p><b>Talk 1</b>  <b>October 15, 2020</b>  <b>14.00-15.20</b></p> <p><b>Moderator:</b>  Maryna Zharikova</p>	<p>Ivan Izonin, Igor Nevliudov and <u><b>Yurii Romashov</b></u> (Ukraine)  <b><i>Computational Models and Methods for Automated Risks Assessments in Deterministic Stationary Systems</i></b></p> <p>Alexandr Kuznetsov, <u><b>Anastasiia Kiian</b></u>, Kateryna Kuznetsova and Alexey Smirnov (Ukraine)  <b><i>Data Hiding Scheme Based on Spread Sequence Addressing</i></b></p> <p>Peter Bidyuk, Liudmyla Petrenko, Nataliia Savina, Tetyana Ivchenko and <u><b>Mariia Voronenko</b></u> (Ukraine)  <b><i>Assessing Risk of Enterprise Bankruptcy by Indicators of Financial and Economic Activity Using Bayesian Networks</i></b></p> <p><u><b>Myroslava Bublyk</b></u>, Victoria Vysotska, Yurii Matseliukh, Volodymyr Mayik and Mariya Nashkerska (Ukraine)  <b><i>Assessing Losses of Human Capital Due to Man-Made Pollution Caused by Emergencies</i></b></p>
<p><b>Talk 2</b>  <b>October 16, 2020</b>  <b>14.00-15.20</b></p> <p><b>Moderator:</b>  Volodymyr Sherstiuk</p>	<p>Peter Bidyuk, Olexander Trofymchuk, Irina Kalinina and <u><b>Aleksandr Gozhyi</b></u> (Ukraine)  <b><i>Modeling Risk Factor Interaction Using Copula Functions</i></b></p> <p>Ihor Rishnyak, Oleh Veres, Vasyl Lytvyn, <u><b>Myroslava Bublyk</b></u>, Ihor Karpov, Victoria Vysotska and Valentyna Panasyuk (Ukraine)  <b><i>Implementation Models Application for IT Project Risk Management</i></b></p> <p>Victor Krasnobayev, Alexandr Kuznetsov, <u><b>Anna Kononchenko</b></u> and Tetiana Kuznetsova (Ukraine)  <b><i>Algorithms for Determining Residues Modulo in a Complex Numerical Domain</i></b></p> <p>Oleksandr Arkhypov (Ukraine), Michal Gregus (Slovakia) and <u><b>Yevheniia Arkhypova</b></u> (Ukraine)  <b><i>Application of a Risk-Based Approach Using Reflexive Risk Models in Building Information Security Systems</i></b></p>

## Session 2.

### Intelligent Information Technologies for Risk-Informed Systems

Session talks	Presentations
<p><b>Talk 1</b> <b>October 15, 2020</b> <b>15.40-17.00</b></p> <p><b>Moderator:</b> Volodymyr Sherstiuk</p>	<p>Yosip Saldan, <b>Lubov Zagoruiko</b>, Tetiana Martianova, Sergey Sergienko, Dmytro Chernov (Ukraine), Iryna Ivanochko (Austria) and Alya Zilgaraeva (Kazakhstan) <b><i>Personal Data Protection with Smart Cards Using Eye-Ground Image Recognition Technique</i></b></p> <p><b>Elena Kuzmina</b>, Oksana Klochko, Nataliia Savina, Svetlana Yaremko, Roman Akselrod (Ukraine) and Christine Strauss (Austria) <b><i>Risk Analysis of the Company's Activities by Means of Simulation</i></b></p> <p>Viktor Perederyi, Eugene Borchik, Volodymyr Lytvynenko and <b>Oksana Ohnieva</b> (Ukraine) <b><i>Information Technology for Performance Assessment of Complex Multilevel Systems in Managing Technogenic Objects</i></b></p> <p><b>Tetiana Hovorushchenko</b>, Alla Herts and Valentina Kunchenko-Kharchenko (Ukraine) <b><i>Intelligent Information Technology for Verifying the Correctness of the Mortgage Agreement Structure</i></b></p>
<p><b>Talk 2</b> <b>October 16, 2020</b> <b>11.40-13.00</b></p> <p><b>Moderator:</b> Maryna Zharikova</p>	<p>Leonid Timchenko (Ukraine), Waldemar Wojcik (Poland), Natalia Kokriatskaia, Volodymyr Tverdomed, <b>Oleksandr Poplavskyi</b>, Olga Levchenko (Ukraine) and Natalia Kryvinska (Slovakia) <b><i>New Methods of Network Modelling Using Parallel-Hierarchical Networks for Processing Data and Reducing Erroneous Calculation Risk</i></b></p> <p><b>Nataliia Burennikova</b>, Vyacheslav Kavetskiy, Oleksandr Lesko, Roman Akselrod, Oksana Adler (Ukraine) and Michal Greguš (Slovakia) <b><i>Modeling of the Investment Risks in Human Capital as the Factor of Enterprise Safety in the Context of the Stakeholder Theory</i></b></p> <p><b>Marian Sorin Nistor</b>, Truong Son Pham, Stefan Pickl (Germany), Constantin Gaidric and Svetlana Cojocar (Moldova) <b><i>A concise review of AI-based solutions for mass casualty management</i></b></p> <p>Lubomir Sikora, Natalia Lysa, Olga Fedevych, Mariya Navytka, <b>Rostislav Tkachuk</b> and Ivanna Dronyuk (Ukraine) <b><i>Information Technologies of Formation of Intellectual Decision-Making Strategies Under Conditions of Cognitive Failures</i></b></p>

### Session 3.

## Information Technologies for Diagnostic, Modeling, and Monitoring of Crisis and Disaster Situations

### *Schedule*

Session talks	Presentations
<p><b>Talk 1</b>  <b>October 16, 2020</b>  <b>10.00-11.20</b></p> <p><b>Moderator:</b>  Volodymyr Sherstiuk</p>	<p><b><u>Maryna Zharikova</u></b>, Volodymyr Sherstjuk, Oleg Boskin and Iryna Dorovska (Ukraine)  <b><i>Event-Based Approach to Multi-Hazard Risk Assessment</i></b></p> <p>Nataliia Komleva, <b><u>Vira Liubchenko</u></b>, Svitlana Zinovatna and Vitaliy Kobets (Ukraine)  <b><i>Risk Management with Lean Methodology</i></b></p> <p><b><u>Sergiy Gnatyuk</u></b> (Kazakhstan), Viktoriia Sydorenko, Oleh Polihenko, Yuliia Sotnichenko and Olena Nechyporuk (Ukraine)  <b><i>Studies on the Disasters Criticality Assessment in Aviation Information Infrastructure</i></b></p> <p><b><u>Ivan Ostroumov</u></b>, Oleg Ivashchuk, Tetiana Shmelova (Ukraine) and Sergii Babichev (Czech Republic)  <b><i>Risk of mid-air collision in a lateral plane</i></b></p>
<p><b>Talk 2</b>  <b>October 16, 2020</b>  <b>15.40-17.30</b></p> <p><b>Moderator:</b>  Maryna Zharikova</p>	<p><b><u>Anzhelika Azarova</u></b>, Larysa Azarova, Liliia Nikiforova, Veronika (Nicole) Azarova, Olena Teplova (Ukraine) and Natalia Kryvinska (Slovakia)  <b><i>Neural Network Technologies of Investment Risk Estimation Taking into Account the Legislative Aspect</i></b></p> <p>Sergey Vyatkin (Russia), <b><u>Olexandr Romanyuk</u></b>, Sergii Pavlov, Pavlo Mykhaylov (Germany), Roman Chekhmestruk, Oksana Vodzinska, Olena Prozor and Volodymyr Lytvynenko (Ukraine)  <b><i>Manipulating Function-Based Objects with Interactive Collision Risk Models</i></b></p> <p><b><u>Serhii Zinchenko</u></b>, Oleh Tovstokoryi, Pavlo Nosov, Ihor Popovych, Vitaliy Kobets and Gennadii Abramov (Ukraine)  <b><i>Mathematical Support of the Vessel Information and Risk Control Systems</i></b></p> <p><b><u>Volodymyr Sherstjuk</u></b>, Maryna Zharikova, Ruslan Levkivskyi and Victor Gusev (Ukraine)  <b><i>Density-Based Risk Assessments within Soft Safety Domains</i></b></p> <p>Oleksandr Tymchenko (Poland), Bohdana Havrysh, Orest Khamula, Sergii Lysenko, <b><u>Oleksandr O. Tymchenko</u></b> and Kateryna Havrysh (Ukraine)  <b><i>Risks of Loss of Personal Data in the Process of Sending and Printing Documents</i></b></p>

## Close Session

<b>October 16, 2020</b> <b>17.30-17.40</b>  <b><i>Moderators:</i></b> Maryna Zharikova, Volodymyr Sherstiuk	Prof. Volodymyr Lytvynenko, Co-Chair of International Program Committee <b><i>Awards and Close Ceremony</i></b>
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