

# Army researchers join international team to understand, defeat 'disinformation' cyberattacks

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1 / 1

ADELPHI, Md. -- A team of U.S. Army researchers recently joined an international group of scientists in Chernihiv, Ukraine to initiate a first-of-its-kind global science and technology research program to understand and ultimately combat disinformation attacks in cyberspace.

Scientists from the Bulgarian Defense Institute in Sophia, Bulgaria; the Chernihiv National University of Technology in Chernihiv, Ukraine; and the National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic" in Kyiv, Ukraine joined U.S. Army Research Laboratory researchers Nov. 14-15 at the kickoff meeting of the Cyber Rapid Analysis for Defense Awareness of Real-time Situation project. The participation of Bulgarian and Ukrainian institutions is funded by NATO Science for Peace and Security Program, which promotes dialogue and practical cooperation between NATO member states and non-NATO partner nations -- in this case Ukraine -- based on scientific research, technological innovation and knowledge exchange.

Over the next three years, the group will develop theoretical foundations, methods, and approaches towards software tools for situational awareness that will enable a nation's defense forces to monitor cyberspace to detect malicious information injections and give timely notification of an information attack, said Dr. Alexander Kott, ARL chief scientist, who attended the meeting together with ARL's Dr. Brian Rivera, the chief of the Network Science Division. The group will also help create conditions necessary for decision making about prevention or timely response to adversarial disinformation injections or manipulations. Especially important in meeting these objectives will be the real world experiences pertaining to actual disinformation attacks directed against Ukraine.

"Information attacks have emerged as a major concern of societies worldwide. They come under different names and in different flavors -- fake news, disinformation, political astroturfing, influence operations, etc. And they may arrive as a component of hybrid

warfare -- in combination with traditional cyber-attacks (use of malware), and with conventional military action or covert physical attacks. A particularly poignant example of a victim of such attacks has been Ukraine," Kott said.

He said the ARL scientists bring to this project a number of critical scientific elements. These include published research results -- theories and algorithms -- that explain and predict propagation of opinions and trust within a network, find untrustworthy sources within cyberspace, and detect false news. Much of these were developed in the context of ARL's extensive Network Science research in alliance with multiple academic institutions, and will help jump-start CyRADARS.

"ARL also operates a unique Open Campus business model. It enables scientists from both USA and other countries to conduct collaborative research at ARL. Within the context of CyRADARS, students and faculty from Ukraine and Bulgaria will be able to come to ARL and use ARL's Open Campus facilities and test beds while working on joint projects with ARL scientists," Kott said.

The research efforts will take place at all four institutions in a virtual, distributed networked laboratory that the project will create.

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The U.S. Army Research Laboratory, currently celebrating 25 years of excellence in Army science and technology, is part of the U.S. Army Research, Development and Engineering Command, which has the mission to provide innovative research, development and engineering to produce capabilities that provide decisive overmatch to the Army against the complexities of the current and future operating environments in support of the joint warfighter and the nation. RDECOM is a major subordinate command of the U.S. Army Materiel Command.

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