Editorial

The Romanian Association for **Information Security Assurance (RAISA):** Ten Years in the Service of Cybersecurity

Professor Ioan C. BACIVAROV, PhD

President of the Romanian Association for Information Security Assurance (RAISA)

1. Cybersecurity or information technology security (IT security) is the protection of computer systems and networks from attack by malicious actors that may result in unauthorised information disclosure, theft of, or damage to hardware, software, or data, as well as from the disruption or misdirection of the services they provide [1].

The field has become significant due to the expanded reliance on computer systems, the Internet, and wireless network standards such as Bluetooth and Wi-Fi and to the growth of smart devices and the various devices that constitute the Internet of Things (IoT).

Cybersecurity is one of the most significant challenges of the contemporary world due to the complexity of information systems and the societies they support. Security is essential for systems that govern large-scale systems with far-reaching physical effects, such as power distribution, elections, and finance [2].

Today we are all aware of the importance of the IT security field and its role in the smooth development of all human activity.

2. A decade ago - in November 2012 - when the concepts related to this field were not yet sufficiently well implemented (at least, at the level of Romania), at the initiative of a group of enthusiastic and dedicated professionals to the IT security field from the EUROQUALROM Laboratory of the Faculty of Electronics, Telecommunications and Information Technology of the University "Politehnica" of Bucharest (including two university professors with experience, pioneers of the dependability field in Romania) and from the Police Academy "Alexandru Ioan Cuza" Bucharest has founded the Romanian Association for Information Security Assurance - RAISA¹, a professional, non-governmental, non-partisan political, non-profit and public benefit association [3].

During the years since then, other experts from academia, research, the corporate environment, and public administration - mainly PhD graduates in the field - have joined RAISA's efforts to promote cybersecurity at the national level.

¹ https://www.raisa.org/

All those involved in the development of RAISA understood the importance of the domain, the unique perspectives of the development of the field and the fact that only the implementation of a vast culture of cybersecurity can contribute to its success.

The aim of the Romanian Association for Information Security Assurance was to promote and support information security activities in compliance with applicable laws and to create a community for the exchange of knowledge between specialists, academic and corporate environment in Romania, based on values such as (a) continuous investment in education; (b) openness to new methods to secure information; (c) involvement in combating the cybercrime phenomenon; (d) focus on facts; (e) concern for excellence.

The vision of RAISA was to promote research and education in the information security field, to contribute to creating and disseminating knowledge and technology in this domain and to create a strong "cybersecurity culture" at the national level.

3. Cybersecurity involves several technical and informational solutions that must be adopted and implemented to position an organisation for the most excellent resiliency in a complex threat landscape. Technology is necessary for addressing cyber threats, but it cannot work independently of complementary factors such as policy guidelines, information sharing on threats, and user awareness [4].

In the context of the recent global cyber-attacks, it is essential to underline that while organisations continue to purchase and deploy technical controls, more needs to be done to focus on the *human side of cybersecurity* - so-named *layer* 8.

IT professionals often use layer 8 to refer to employees' lack of awareness and a weak cybersecurity culture. Today, it is just as essential to secure *human assets - layer 8 -* as it is to secure layers 1 through 7 [5].

Consequently, all countries, professional organisations, and companies must consolidate a robust "cybersecurity culture" [6]. That's why one of the most critical objectives of RAISA during these five years beginning period was to build a "cybersecurity culture" in Romania.

Among the RAISA achievements aimed at implementing a culture of cybersecurity in our country, we can mention the following ones:

- Implementation of several RAISA web portals specialised in IT security, Information Security (www.securitatea-informatiilor.ro), Cybercrime (www.criminalitatea-informatica.ro), Cybersecurity (www.securitatea-cibernetica.ro), Network Security (www.securitatea-retelelor.ro); these portals aim to make available to those interested in recent IT security information.
- Development of several successful *RAISA research projects* in the field, which covered a variety of issues, starting from *Protection of Computer Systems Against Cybercrime Phenomenon, Analysis of the Computer Networks Security* and up to *Strengthen Cybersecurity Education and Research for Preventing Cybercrime, Fighting Crime and Corruption* all integrated to the final goal of *Enhance Cyber Capacity Building in Romania for Preventing and Combating the Cybercrime Phenomenon*.
- In recent years, RAISA has implemented several projects with international participation. We mention among these: *Fighting Crime and Corruption, a* project developed by the Prosecutor's Office attached to the High Court of

Cassation and Justice with the help of RAISA, funded by the *Justice Programme of the Norwegian Financial Mechanism 2014-2021*; *Strengthen Cybersecurity Education and Research for Preventing Cybercrime* and *Enhance Cyber Capacity Building in Romania for Preventing and Combating the Cybercrime Phenomenon* projects developed by RAISA with the support of the *U.S. Embassy in Romania* (see *Appendix*).

- The organisation of several *RAISA workshops*, dedicated primarily to young researchers, engineers, MSc, and PhD students in the IT field (especially in cybersecurity); we could mention among the engaging workshops which led to vivid debates the following ones: *Methods for cyber-attacks investigation*, *Access to education and information through the Internet, Information security in Office applications, Technologies for websites development* a.o.
- Organisation and coordination (by Prof. *Ioan Bacivarov*, PhD and Assoc. Prof. *I.C. Mihai*, PhD) of special sections/sessions on IT Security and Cybercrime at recent *international conferences & symposia* in the field, including the *International IEEE Conference in Quality and Dependability* from *CCF 2012* to *CCF 2018* (sessions *Dependability, Risk, Security*), *Cybercon Romania* International *Conference* (www.cybercon.ro).
- Support (organisation of debates, specialised software, etc.) for developing the
 Master Programme "Quality and Dependability in Electronics and
 Telecommunications ICSFET" from the Faculty of Electronics,
 Telecommunications and Information Technology, University Politehnica of
 Bucharest.
- Elaboration in the last decade, under the aegis of RAISA of several books, reports, and guides in the field of IT and dependability security by key members and collaborators of RAISA, including *I. Bacivarov, I.C. Mihai, Angelica Bacivarov, C. Ciuchi, G. Petrică* a.o. (see *Appendix*).
- **4**. Undoubtedly, one of the main achievements of the RAISA the "crown pearl" of the association is *IJISC* the scientific journal that RAISA has decided to publish since 2012 [7].
- *IJISC* the *International Journal of Information Security and Cybercrime* is an international scientific peer-reviewed journal aiming to bring together the latest high-level research and development in information security and the latest methods to prevent and combat the cybercrime phenomenon.

The *Editorial Board* of *IJISC* includes specialists in information security and cybercrime from academic police structures and university departments, their activity taking place under the close guidance of an *International Scientific Board* composed of internationally recognised personalities from the academic field.

In ten years of existence, academics and researchers from 30 countries have chosen *IJISC* for the submission of their scientific papers, and well-known professors and researchers from 13 countries have joined the *IJISC International Scientific Board. IJISC* has grown tremendously over the last ten years in terms of its academic quality and international visibility.

At this moment, **IJISC** is indexed in several *international databases* for scientific journals, including the following ones: EBSCO*host*; CEEOL (Central and Eastern

European Online Library); Google Scholar; CrossRef; Global Impact Factor; Cite Factor - Academic Scientific Journals; OCLC WorldCat; MIAR - Information Matrix for the Analysis of Journals; HeinOnline; ACADEMIA.edu; Mendeley - Academic Social Network; SCIPIO - Scientific Publishing & Information Online a.o. Permanent links to published papers are maintained using the Digital Object Identifier system by CrossRef.

The International Journal of Information Security and Cybercrime - IJISC will carry its mission into the future with the aims of enhancing the journal's scientific level and global impact, continuing to provide readers with access to high-quality research, strengthening its digital publication capabilities, and ultimately becoming a top international journal in the field of cybersecurity.

5. Another achievement of which RAISA is proud is the organisation of the *CyberCon Romania Conference*, *which* aims to raise cyber awareness, embody the cybersecurity culture, and share best practices in fighting cybercrime.

CyberCon Romania unites top professionals in cybersecurity and related domains with the following objectives:

- Enhancing awareness about cyber threats and their impact.
- Cultivating a strong cybersecurity culture among individuals and organisations.
- Facilitating the exchange of practical strategies and best practices in combatting cybercrime.
- Encouraging innovation and research in the development of advanced cybersecurity solutions and tools.
- Fostering international collaboration to address global cyber challenges.

The last edition of the conference, *CyberCon Romania 2022*, was organised in May 2022 by the Romanian Association for Information Security Assurance (RAISA) with the support of the U.S. Embassy in Romania. Conference partners were the Romanian National Cyber Security Directorate, National Cyberint Center, Romanian Police, Romanian National Institute of Magistracy, Romanian Banking Institute, European Institute of Romania, National Association for Information Systems Security (ANSSI), the ISACA - Romania Chapter, CIO Council Romania, and the Cyber Security Research Center from Romania.

6. The coming years will bring new challenges for RAISA. The main one refers to the increasingly intensive use of *artificial intelligence (AI)* techniques in *cybersecurity*.

One of the reasons for the rapid acceleration of cybercrime is the lower barrier to entry for malicious actors. Cybercriminals have evolved their business models: the use of large language models (LLMs) like *ChatGPT* to write *malicious code* also highlights the potential cybersecurity challenges.

Because of these threats, business leaders in today's digital world must know about AI's developments. According to *Forbes*, 76% of enterprises have prioritised AI and machine learning in their IT budgets [8]. As a result, **AI** is becoming an essential tool in the fight against cybercrime.

7. Analysing in retrospect the first decade of activity of RAISA, we can proudly state that all the objectives considered for establishing this organisation have been fulfilled.

In the current international conditions, a period full of challenges follows for all those who work in cybersecurity. This period can be successfully overcome only through the close cooperation of specialists in this sensitive and challenging field.

And RAISA, through its specialists, is ready to respond to these critical challenges and contribute to fulfilling its primary goal, promoting *cybersecurity culture in Romania*.

Acknowledgements

At this anniversary moment, we sincerely thank all those involved in these ten years of *RAISA*'s activities and have contributed decisively to their success: IT professionals, engineers, and PhD students in the IT field and academics.

Special thanks to all those who have supported the development and growth of the *IJISC* magazine, which has been transformed in 10 years into a recognised international scientific journal in major international databases: readers, authors, reviewers, Editors, and members of the International Scientific Board.

Note

To mark the 10th anniversary of the establishment of **RAISA**, the *founding members* of RAISA and several other specialists who have contributed decisively to the association's activities in these ten years of activity had an informal meeting held in a relaxed, friendly atmosphere in November 2022. It was an opportunity to recall **RAISA**'s activities in this first decade of activity and draw future plans.

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About the author



IOAN C. BACIVAROV received the MSc in Electronics and Telecommunications (1971) - as Valedictorian and the PhD in Reliability Engineering (1978). He is a full Professor at the Electronic Technology and Reliability Department of POLITEHNICA University of Bucharest (UPB), Romania and Director of EUROQUALROM -ETTI Laboratory, beginning in 1996.

Dr Ioan C. Bacivarov was an Invited Professor at ETH Zurich, TIMA - National Polytechnical Institute Grenoble, University of Angers and University of Lisbon and a Visiting Professor at several universities from European

Union - including Erasmus University Rotterdam, ENSAM Paris, University of West Scotland, INP Grenoble, Polytechnical University of Catalunya a.o. (beginning with 1992).

Prof. *Ioan C. Bacivarov* is co-founder and President of the Romanian Association for Information Security Assurance - RAISA and coordinates the International Journal of Information Security and Cybercrime - IJISC. He is the President of NTC 144 ASRO - IEC "Dependability" and a member of the Directorial Boards of SRAC and RENAR. His teaching and research interests include quality and dependability (esp. reliability and safety/security), engineering and management, electronic technology, and cyber-security. He has published 25 books, more than 280 papers and coordinated 48 research projects in the above areas.

He is the Scientific Chairman of the International Conference in Quality and Dependability - CCF, organised in Romania (from 1992), Co-Scientific Chair of the CyberCon Romania conferences and a member of the Scientific Board of several international conferences in quality and dependability, including ESREL, MMR, QUALITA, PSAM a.o. He coordinated 24 workshops and symposia in the field of quality and dependability.

Dr Ioan C. Bacivarov is co-founder and Editor-in-Chief / Editor of several scientific journals, including Asigurarea Calitatii - Quality Assurance, Quality - Access to Success, Optimum Q, Calitate-Fiabilitate-Metrologie; he is/was Editor of several international prestigious scientific journals in the field including Quality Engineering, Forum Qualité Scientifique, Reliability Engineering & System Safety and Maintenance Management International a.o.

In recent years, Prof. Bacivarov has focused on writing the history of electronics, quality and reliability in Romania and evoking important personalities in these fields.

Professor I.C. Bacivarov contributed to the development of higher education in technical universities from Romania in the field of quality and dependability in his capacity of international coordinator of the EU educational project TEMPUS JEP 11300-96 "EUROQUALROM" and as a coordinator of the postgraduate program of UPB in the field. He introduced 16 new courses and coordinated two new Master programs in quality and dependability at ETTI - UPB (ICF and ICSFET).

Appendix



Research / Development Projects

Start	End	Title	Description	Website
2022	2023	Fighting Crime and Corruption	Project developed by the Prosecutor's Office attached to the High Court of Cassation and Justice with the help of the Romanian Association for Information Security Assurance, funded by the Justice Programme of the Norwegian Financial Mechanism 2014-2021.	www.cyberlearning.ro
2022	2023	Building a Network and a Learning Platform for Raising the Level of Cybersecurity	The project aims to build a network of students, cybersecurity experts, and organizations to analyze cybersecurity challenges and opportunities. Project developed by the Romanian Association for Information Security Assurance (RAISA) with the help of the International Visitor Leadership Program (IVLP).	www.cyberclub.ro
2021	2022	Strengthen Cybersecurity Education and Research for Preventing Cybercrime	The project goal is to strengthen cybersecurity education and to promote and disseminate cybersecurity research in Romania for preventing cybercrime. The project was developed by the Romanian Association for Information Security Assurance with the support of the U.S. Embassy in Romania.	www.cyberlearning.ro and proceedings.cybercon.ro
2020	2021	Enhance Cyber Capacity Building in Romania for Preventing and Combating the Cybercrime Phenomenon	The project goal is to strengthen the cyber capacity in Romania by raising cybersecurity awareness and improving the skills of criminal justice authorities and the private sector in fighting cybercrime. The project was developed by the Romanian Association for Information Security Assurance with the support of the U.S. Embassy in Romania.	www.cyberlearning.ro

Start	End	Title	Description	Website
2017	2019	Strategies for Monitoring the Online Platforms Security	Goal: Analyzing the strategies for monitoring the online platforms security and mitigating the cyberattacks effects.	www.web-scan.eu
2016	2017	Analysis of the Computer Networks Security. Architectures, Protocols, and Solutions	Goal: Analyzing the computer networks security and disseminating the main solutions to a web platform, for improving the cybersecurity culture.	www.securitatea- retelelor.ro
2014	2016	Studies on Modern Methods of Publishing Information in Online Environment	Goal: Studying the modern methods of publishing and promoting the information (web sites, wiki sites, blogs, social networks, cloud computing).	
2013	2014	Studies on Implementing Safety Measures to Ensure Information Security	Goal: Studying the best policies and security methods for computer systems and communications and disseminating them into an online platform to promote safety measures for information security.	www.securitatea- informatiilor.ro
2013	2014	Protection of Computer Systems Against Cybercrime Phenomenon	Goal: Developing a platform for communicating important information regarding latest cyber-attacks and methods of protection against them to provide to the public effective methods to prevent and to combat the phenomenon of cybercrime.	www.criminalitatea- informatica.ro
2013	2015	Implementation of IT&C Technologies in Online Education System	Goal: Developing an e-learning platform for the purpose to develop special training programs and perfecting the personnel involved in the management of electronic information (processing, management, security).	www.arasec.ro/elearning
2012	2013	Scientific Research Promotion in Information Security Field	Goal: Publishing a scientific journal for academic professorial staff, PhD students, researchers, graduate students and other professional categories in the field of information security and cybercrime.	www.ijisc.com

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Conferences, Special Sessions, and Events

Date	Title	Description	Website
Yearly,	CyberCon	An annual event that aims to raise	www.cybercon.ro
since	Romania	awareness, embody the cybersecurity	
2022	International	culture, and share best practices in	
	Conference	fighting cybercrime.	
May 27,	Lessons learned	This online event was organized by	www.cyberlearning.ro/cyb
2021	from	RAISA in partnership with the U.S.	ersecurity-online-event/
	cybersecurity	Embassy in Romania and the	
	experts.	Romanian National Computer Security	
	Perspectives from	Incident Response Team (CERT-RO).	
	Romania and the	The aim of this event was to	
United States of		emphasize the importance of sharing	
	America	best practices and relevant case studies	
		for raising the level of awareness and	
		embodies the cybersecurity culture.	
Yearly,	, International An annual scientific conference the		proceedings.cybercon.ro
since	Conference on	aims to encourage the exchange of	
2014	Cybersecurity and	ideas about evolution of cyberspace,	
	Cybercrime (IC3)	information security challenges and	
		new facets of the phenomenon of	
		cybercrime.	
2012 International Or		Organization and coordination of	ccf-quality-
-	IEEE Conference	special sections / sessions	conference.com
2018 in Quality and Dependability, Risk, Sec		Dependability, Risk, Security	
	Dependability -		
	CCF		

Publications (Books, Journals, Studies, and Guides)

Year	Title	Description	Website
2021	Cybersecurity	Guide developed with the help of the	www.raisa.org/documents/
	Guide	U.S. Embassy in Romania, the	Cybersecurity-Guide.pdf
		Romanian National Computer Security	
		Incident Response Team (CERT-RO),	
		and the National Association for	
		Information Systems Security	
		(ANSSI).	
		Authors: Iulian ALECU, Costel	
		CIUCHI, Toma CÎMPEANU, Iulian	
		COMAN, Larisa GĂBUDEANU, Ioan-	
		Cosmin MIHAI, Cosmina MOGHIOR,	
		Nelu MUNTEANU, Gabriel PETRICĂ,	
		Ionuţ STOICA, Cătălin ZETU	
2020	Cybersecurity:	Book developed with the support of	www.raisa.org/documents/
	Challenges and	the Romanian National Computer	CybersecurityEDU2020-
	Perspectives in	Security Incident Response Team	EN.pdf
	Education		

Year	Title	Description	Website
		(CERT-RO) and the Romanian	
		Ministry of Education and Research.	
		Coordinators: Ioan-Cosmin MIHAI,	
		Costel CIUCHI, Gabriel PETRICĂ	
2019	Considerations on	Study developed on the occasion of	www.raisa.org/documents/
	Challenges and	the Romanian Presidency at the	CybersecurityRO2019.pdf
	Future Directions	Council of the European Union, with	
	in Cybersecurity	the support of the Romanian National	
		Computer Security Incident Response	
		Team (CERT-RO) and the National	
		Cyberint Center within the Romanian	
		Intelligence Service.	
		Coordinators: Ioan-Cosmin MIHAI,	
		Costel CIUCHI, Gabriel PETRICĂ	
2019	Dependability of	The monograph "Dependability of	
	Information	Information Systems" is a complex	
	Systems	and valuable approach on the concept	
		of dependability (addressed in the	
		synergy of its components – reliability,	
		security, safety, availability,	
		confidentiality, resilience, etc.),	
		current and relevant keywords in the	
		field of scientific research, both at	
		national and international level. Authors: Gabriel PETRICĂ, Sabina-	
		Daniela AXINTE, Ioan C.	
2018	Cumant	BACIVAROV This head sizes to analyze the asymmetry	ion 0011 no /111n
2018	Current Challenges in the	This book aims to analyze the current challenges in cyberspace, identifying	ier.gov.ro/wp- content/uploads/2018/10/
	Field of	threats, vulnerabilities, and risks to	SPOS 2017 Study 4 FI
	Cybersecurity -	cybersecurity. It is presented the	NAL.pdf
	Impact and	evolution and structure of cyber-	<u>IVAL.pur</u>
	Romania's	attacks, the best practices for	
	Contribution to	cybersecurity measures, public-private	
	the Field	cooperation and Romania's capacity to	
		respond to virtual threats at national,	
		European and regional levels.	
		Authors: Ioan-Cosmin MIHAI, Costel	
		CIUCHI, Gabriel PETRICĂ	
2016	Web	This book is useful to all those who	
	Programming.	wish to acquire basic knowledge on	
	Applications in	Internet programming. The book	
	HTML, CSS,	provides numerous practical examples	
	JavaScript	of medium-advanced level of	
		programming, tested on updated	
		operating systems and modern	
		browsers.	
		Authors: Angelica BACIVAROV,	
		Costel CIUCHI, Gabriel PETRICĂ	

Year	Title	Description	Website
2015	Challenges and	This book aims to present the concept	
	Strategies for	of cybersecurity and to propose	
	Cybersecurity	strategies and solutions to ensure it.	
		Cyberspace, characterized by the	
		absence of borders and anonymity,	
		presents, besides the obvious benefits,	
		a number of threats difficult to identify	
		and counteract that can target the	
		critical infrastructure of a state.	
		Authors: Ioan-Cosmin MIHAI,	
		Gabriel PETRICĂ, Costel CIUCHI,	
		Laurențiu GIUREA	
2014	Information	This book has the purpose to study	
	Security. Second	security systems and to propose	
	Edition, Revised	solutions to improve it, being a	
	and Expanded	scientific portfolio, theoretical and	
		practical, which is addressing equally	
		to those with Master's degrees,	
		doctoral or post-doctoral and to	
		specialists in this field.	
		Authors: Ioan-Cosmin MIHAI,	
2014	G 1 .	Gabriel PETRICĂ	
2014	Cybercrime.	This book presents a complex study on	
	Second Edition,	cybercrime phenomenon, analyzing	
	Revised and	the current cyber-attacks.	
	Expanded	Authors: Ioan-Cosmin MIHAI,	
2012	Internet Services	Laurențiu GIUREA The aim of this book is to provide the	
2012	internet services	readers with a bird's eye view on the	
		Internet concept (aim, technical	
		means, applications, and risks),	
		addressing the various types of	
		hardware technologies and specialized	
		software protocols and tools.	
		Authors: Angelica BACIVAROV,	
		Costel CIUCHI, Gabriel PETRICĂ	
2012	International	IJISC is a scientific peer-reviewed	www.ijisc.com
	Journal of	journal with a frequency of 2	_
	Information	issues/year, edited by professorial staff	
	Security and	and experts from the University	
	Cybercrime	Politehnica of Bucharest and other	
	(IJISC)	universities from Romania and abroad.	
		The principal aim of IJISC is to bring	
		together the latest research and	
		development in information security	
		and the latest methods to prevent and	
		to combat the cybercrime	
		phenomenon.	

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Awards

Year	Title	Description
2022	Cyber Outstanding Security	The partnership between the U.S. Embassy in Romania
	Performance Award (Cyber	and RAISA won the Outstanding Cyber Security
	OSPA) 2022	Partnership category within the 2022 edition of Cyber
		Outstanding Security Performance Awards (Cyber
		OSPAs).
2021	Finalist at the Cyber	The project Building a Network and a Learning
	Outstanding Security	Platform for Raising the Level of Cybersecurity was
	Performance Award (Cyber	included in the Outstanding Cyber Security
	OSPA) 2021	Training/Awareness Initiative category
2020	Outstanding Security	The study "Considerations on Challenges and Future
	Performance Award (OSPA)	Directions in Cybersecurity" (2019) won the
		Outstanding Security Performance Award (OSPA) for
		the best Romanian cybersecurity initiative for 2020.

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