

Edited by **Tomasz Kołtunowicz**

Cover design by **Mariusz Kolasik**

Printed by PRINT-6
20-218 Lublin, 9 Hutnicza Str.

ISBN 83-87414-58-1

Editor:
Department of Electrical Devices and HV Technology
Lublin University of Technology
20-618 Lublin, 38A Nadbystrzycka Str.
Poland

INTERNATIONAL SCIENTIFIC COMMITTEE

Paweł Żukowski	Lublin University of Technology, Poland – Chairman
Vladimir Odzhaev	Belarussian State University, Belarus – Co-Chairman
Liudvikas Pranevicius	Vytautas Magnus University, Lithuania – Co-Chairman
Fiodor Romaniuk	Belarussian State Technical University, Belarus – Co-Chairman
Dmitro Freik	Prekarpathian University, Ukraine – Co-Chairmans
Igor Tashlykov	Belarussian State Pedagogical University, Belarus – Co-Chairman
Janusz Partyka	Lublin University of Technology, Poland – Scientific Secretary

Viktor Aniszczyk	Belarussian State University, Belarus
Guennadi Bondarenko	Moscow State Institute of Electronics and Mathematics, Russia
Kazimierz Cywiński	Białystok Technical University, Poland
Zbigniew Gacek	Silesian University of Technology, Poland
Nikolaj Gerasimenko	Moscow Institute of Electronic Technology, Russia
Jeon Han	Sung Kyun Kwan University, Korea
Kairat Kadyrzanov	Institute of Nuclear Physics, Kazakhstan
Czesław Karwat	Lublin University of Technology, Poland
Naoki Kischimoto	National Institute for Materials Science, Japan
Fadiej Komarov	Belarussian State University, Belarus
Zbigniew Kowalski	Wrocław University of Technology, Poland
Dariusz Mączka	M.Curie-Skłodowska University, Poland
Bogdan Miedziński	Wrocław University of Technology, Poland
Franciszek Mosiński	Technical University of Łódź, Poland
Aleksy Patryn	Technical University of Koszalin, Poland
Wiktor Pietrzyk	Lublin University of Technology, Poland
Vladimir Philipenko	RPC Integral, Minsk, Belarus
Alexander Pogrebnjak	Sumy Institute of Surface Modification, Ukraine
Jerzy Skubis	Technical University of Opole, Poland
Ryszard Smarzewski	Catholic University of Lublin, Poland
Andrzej Sowa	Białystok Technical University, Poland
Lech Subocz	Technical University of Szczecin, Poland
Aleksander Tadzhibaev	Petersburg Power Engineering Training Institute for Managers and Experts, Russia
Piotr Tarkowski	Lublin University of Technology, Poland
Yuri Tyurin	Electric Welding Institute NANU, Ukraine
Roland Wiśniewski	Institute of Atomic Energy, Poland
Waldemar Wójcik	Lublin University of Technology, Poland
Jerzy Zdanowski	Wrocław University of Technology, Poland
Jerzy Żuk	M.Curie-Skłodowska University, Poland

LOCAL ORGANIZING COMMITTEE

Czesław Karwat	Lublin University of Technology – Chairman
Mariusz Kolasik	Lublin University of Technology
Tomasz Kołtunowicz	Lublin University of Technology
Czesław Kozak	Lublin University of Technology
Zenon Pawełczak	Lublin University of Technology
Miroslaw Pawłot	Lublin University of Technology
Wiktor Pyda	Lublin University of Technology
Barbara Skalska	Lublin University of Technology
Paweł Węgierek	Lublin University of Technology

License Protection of a Component of Web-Applications on .Net Framework

S.B. Makas¹⁾, P.P. Urbanovich^{1),2)}

¹⁾ *Belorussian State Technological University, Minsk, Belarus*

²⁾ *Lublin Catholic University, Lublin, Poland*

Integration of information systems with telecommunication technologies leads to change of a principle of the organization of the modern software: applied, network, client-server, etc. aside the distributed, divided appendices actively using global information networks as service by information interchange and performance of problems. The brightest representative of such integration – world wide web Internet. As consequence, increases a circle of problems which execution to be transferred in a context of worldnet Internet. Such integration into a worldnet of information systems puts new aspects in questions of protection of the appendices using the Internet and their protection. Features of functioning the Internet - appendices impose a number of restrictions and additional requirements that puts actual a problem of development of specialized methods of protection a component the Internet - appendices on the decision of questions of protection of appendices.

In a kind of these features, known methods of protection do not meet the requirements of functioning the Web-appendix. Proceeding from it use technology of licensing, as the optimal way of protection a component of Web-appendices. It is based on use of family of open interfaces ILicense of the environment of execution .Net Framework. This gives a number of advantages: protection of the most important objects of the appendix; to distribute elements of protection under the appendix; independence of hardware and human resources.

For realization of license protection a component it is necessary to solve a number of problems: the organization of structure of the license information; storage of the license information; the edition distributed a component and generation of the license information; check of licenses, methods of activation and periodic check. For storage of the license information it is offered to use a method of sedimentation of the key information in the binary file-container generated under set statistical laws of distribution. The method of sedimentation should deform minimally the container, not lead to changes of statistical characteristics and criteria of distortion of the container. As realization of a method of sedimentation of the key information it is offered to use the generator of pseudo-casual rearrangements on a confidential key within the limits of dimension of the container. Application of the given method will allow to receive files with the key license information of the identical size and with monotonous statistical characteristics, that considerably will complicate their analysis and extraction of the key information and as consequence, will complicate process of reproduction of the illegal license information.

References

- [1] Freeman A., Jones A.: Programming .NET Security, O'Reilly Press, June 2003, p. 714
- [2] Connell J.: Developing Microsoft® .NET Controls, Microsoft Press, 2004, p. 430
- [3] MSDN Magazine, The Lifetime of a Secure Application, March 2004
- [4] MSDN, Anthology of .Net developer's. val. 4. Security in .Net, 2004
- [5] M. Luby, C. Rackoff: How to Construct Pseudorandom Permutations from Pseudorandom Functions, SIAM Journal on Computing, 1998
- [6] G. Kohanovich, A. Puzyrenko: Steganography of computers, MK-Press, 2006