

CPSA Output Analysis

John D. Ramsdell Joshua D. Guttman
The MITRE Corporation
CPSA Version 4.4.5

August 21, 2024

Contents

© 2010 The MITRE Corporation. Permission to copy without fee all or part of this material is granted provided that the copies are not made or distributed for direct commercial advantage, this copyright notice and the title of the publication and its date appear, and notice is given that copying is by permission of The MITRE Corporation.

- 1 Introduction
- 2 Graphical Output
- 3 Simple Querying
- 4 Advanced Querying
 - 4.1 Database
 - 4.2 Prolog Analysis
 - 4.2.1 Analysis Using a Dynamic Logic

References

- [1] Edsger W. Dijkstra. Why numbering should start at zero. <http://www.cs.utexas.edu/users/EWD/transcriptions/EWD08xx/EWD831.html>, August 1982.
- [2] Shaddin F. Doghmi, Joshua D. Guttman, and F. Javier Thayer. Searching for shapes in cryptographic protocols. In *Tools and Algorithms for Construction and Analysis of Systems (TACAS)*, number 4424 in LNCS, pages 523–538. Springer, March 2007. Extended version at <http://eprint.iacr.org/2006/435>.
- [3] Daniel Dolev and Andrew Yao. On the security of public-key protocols. *IEEE Transactions on Information Theory*, 29:198–208, 1983.
- [4] Joseph A. Goguen and Jose Meseguer. Order-sorted algebra I: Equational deduction for multiple inheritance, overloading, exceptions and partial operations. *Theoretical Computer Science*, 105(2):217–273, 1992.
- [5] Joshua D. Guttman. Shapes: Surveying crypto protocol runs. In Veronique Cortier and Steve Kremer, editors, *Formal Models and Techniques for Analyzing Security Protocols*, volume 5 of *Cryptology and Information Security Series*. IOS Press, 2011.

- [6] Joshua D. Guttman and F. Javier Thayer. Authentication tests and the structure of bundles. *Theor. Comput. Sci.*, 283(2):333–380, 2002.
- [7] John D. Ramsdell. Deducing security goals from shape analysis sentences. The MITRE Corporation, April 2012. <http://arxiv.org/abs/1204.0480>.
- [8] John D. Ramsdell. *CPSA Security Goals and Rules*. The MITRE Corporation, 2015. In <https://github.com/mitre/cpsaexp> source distribution, doc directory.
- [9] John D. Ramsdell, Joshua D. Guttman, Moses D. Liskov, and Paul D. Rowe. *The CPSA Specification: A Reduction System for Searching for Shapes in Cryptographic Protocols*. The MITRE Corporation, 2009. In <https://github.com/mitre/cpsaexp> source distribution, doc directory.