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Contents

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Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Methods for Testing and Specification (MTS).

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**may not**", "**need**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

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1 Scope

The present document reports on the application of model-based security testing in different industrial domain. Relevant case studies and their results are described in terms of system under test, applied tool chain, together with an overview of the technical requirements. The case studies were conducted as part of ITEA2 DIAMONDS project (http://www.itea2-diamonds.org/index.html) and SPaCIoS project (http://www.spacios.eu/). The document concentrates on the results and conclusions from this work, giving an insight into how applicable such methods are today for testing and indicating the current strengths and weaknesses.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

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2.1 Normative references

The following referenced documents are necessary for the application of the present document.

Not applicable.

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] AVANTSSAR Deliverable 2.3 (update): "ASLan++ specification and tutorial", 2011.

NOTE: Available at http://www.avantssar.eu.

[i.2] ITEA2 DIAMONDS Deliverable D5.WP2: "Final Security-Testing Techniques", 2013.

[i.3] ITEA2 DIAMONDS Deliverable D5.WP3: "Final Security Testing Tools", 2013.

[i.4] ITEA2 DIAMONDS Deliverable D5.WP4: "DIAMONDS Security Testing Methodology", 2013.

[i.5] SPaCIoS Deliverable 3.3: "SPaCIoS Methodology and technology for vulnerability-driven security testing", 2013.

[i.6] SPaCIoS Deliverable 5.1: "Proof of Concept and Tool Assessment v.1", 2011.

[i.7] SPaCIoS Deliverable 5.2: "Proof of Concept and Tool Assessment v.2", 2012.

[i.8] SPaCIoS Deliverable 5.4: "Final Tool Assessment", 2013.

[i.9] A. Ulrich, E.-H. Alikacem, H. Hallal, and S. Boroday: From scenarios to test implementations via promela: "Testing Software and Systems", pages 236-249, 2010.

[i.10] J. Oudinet, A. Calvi, and M. Büchler: "Evaluation of ASLan mutation operators". In Proceedings of the 7th International Conference on Tests and Proofs. Springer, June 2013. 20 pages.