

EUROPEAN MIDDLEWARE INITIATIVE

EMI SECURITY ARCHITECTURE

ASSESSMENT AND FUTURE DIRECTIONS

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Abstract:

This document provides a description of the EMI security framework architecture and an assessment of its strengths and potential weaknesses. A set of recommendations and directions for future work are provided.

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1 INTRODUCTION

1.1 EXECUTIVE SUMMARY

[A brief summary of the content of the document. It must give the reader an idea of what is described and the main points of each chapter in a condensed way]

1.2 DOCUMENT ORGANISATION

[A description of the document organization by chapter]

2 OVERVIEW OF THE EMI SECURITY ARCHITECTURE

2.1 DEFINITION OF SECURITY ARCHITECTURE

[Definition of security architecture or framework in general and in the context of distributed grid computing, basic principles]

2.2 TRUST, AUTHENTICATION AND AUTHORIZATION: A TERMINOLOGY

[Definitions of the most important concepts]

2.3 VIRTUAL ORGANIZATION, SITES AND COMMON GRID SERVICES

[Definitions, brief description of the major grid services and how security applies to them]

2.4 AUTHENTICATION

2.4.1 Identity Credential Formats

2.4.2 Short-Lived Credential Services

2.4.3 Bootstrapping Authentication

2.4.4 Enforcing Validity Constraints

2.4.5 Revocation

2.4.6 Certificate Renewal

2.4.7 Delegation

2.4.8 Renewal of Proxy Certificates

2.4.9 Anonymity, Privacy, Pseudonymity

2.4.10 EMI Common Services and Libraries

2.4.10.1 *CAnL*

2.4.11 ARC, gLite and UNICORE Security Services

2.4.11.1 *VOMS, UVOS, etc.*

2.5 USER KEY MANAGEMENT

2.5.1 Hydra

2.6 AUTHORISATION

2.6.1 Policy Definition and Management

2.6.2 Argus

2.7 IDENTITY SWITCHING

2.7.1 glExec

2.8 DATA MANAGEMENT, ENCRYPTION, CONFIDENTIALITY

2.9 FEDERATED IDENTITIES

2.9.1 STS

2.10 LOGGING, TRACING, AUDITING

2.11 SECURITY MANAGEMENT AND THREATS HANDLING

2.11.1 Software Security Management

2.11.1.1 Bug fixing, Emergency Releases, etc.

2.11.2 Grid Services Security Assessment

2.11.3 Security Response Teams and Coordination Bodies

2.11.4 International Collaborations

2.11.4.1 OGF, IGTF, etc

2.12 ASSESSMENT, STRENGTHS, AREAS FOR IMPROVEMENT