This is a free page sample. Access the full version online.

NSAI Standards

Irish Standard Recommendation
S.R. CWA 16971:2015

Global eBusiness Interoperability Test Bed (GITB) Phase 3: Implementation Specifications and Proof-of-Concept

© CEN 2016 No copying without NSAI permission except as permitted by copyright law.

This is a free page sample. Access the full version online.

S.R. CWA 16971:2015

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:	*Published:*
CWA 16971:2015	2015-12-23

This document was published under the authority of the NSAI and comes into effect on:	ICS number:
2016-01-11	35.240.01
	NOTE: If blank see CEN/CENELEC cover page

NSAI	T +353 1 807 3800	Sales:
1 Swift Square,	F +353 1 807 3838	T +353 1 857 6730
Northwood, Santry	E standards@nsai.ie	F +353 1 857 6729
Dublin 9	W NSAI.ie	W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

This is a free page sample. Access the full version online.

National Foreword

S.R. CWA 16971:2015 is the adopted Irish version of the European Document CWA 16971:2015, Global eBusiness Interoperability Test Bed (GITB) Phase 3: Implementation Specifications and Proof-of-Concept

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This is a free page sample. Access the full version online.

This page is intentionally left blank

This is a free page sample. Access the full version online.

CEN WORKSHOP AGREEMENT

CWA 16971

December 2015

ICS 35.240.01

English version

Global eBusiness Interoperability Test Bed (GITB) Phase 3: Implementation Specifications and Proof-of-Concept

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties, the constitution of which is indicated in the foreword of this Workshop Agreement.

The formal process followed by the Workshop in the development of this Workshop Agreement has been endorsed by the National Members of CEN but neither the National Members of CEN nor the CEN-CENELEC Management Centre can be held accountable for the technical content of this CEN Workshop Agreement or possible conflicts with standards or legislation.

This CEN Workshop Agreement can in no way be held as being an official standard developed by CEN and its Members.

This CEN Workshop Agreement is publicly available as a reference document from the CEN Members National Standard Bodies.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

© 2015 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No.:CWA 16971:2015 E

This is a free page sample. Access the full version online.

Contents

Contents 2

European foreword 9

1 Executive Overview 10

2 Definitions and Abbreviations 15
- **2.1 Definitions** 15
  - 2.1.1 eBusiness Specifications (→ see Section 3) 15
  - 2.1.2 Testing Purposes and Requirements (→ see Section 3.4) 15
  - 2.1.3 Testing Roles (→ see Section 4) 16
  - 2.1.4 Testing Framework and Architecture (→ see Section 3.4) 16
- **2.2 Abbreviations** 19

Part I: Motivation for eBusiness Testing and Overview of GITB Testing Framework 20

3 Motivation 20
- **3.1 Testing as a Key Prerequisite to eBusiness Interoperability** 20
- **3.2 Stakeholders and their Interests in eBusiness Testing** 20
- **3.3 Categories of eBusiness Specifications** 22
- **3.4 eBusiness Testing** 23
  - 3.4.1 Conformance and Interoperability Testing 23
  - 3.4.2 Testing Context and Stakeholders 24
- **3.5 Benefits of a Global eBusiness Interoperability Test Bed** 25

4 GITB Principles and Testing Framework 26
- **4.1 Objectives and Principles** 26
- **4.2 Synthesis of GITB Testing Framework** 27
- **4.3 Roles within the Testing Framework** 27
- **4.4 GITB Methodology** 28
  - 4.4.1 Using Test Assertions 28
  - 4.4.2 Standalone Document Validation 28
  - 4.4.3 SUT-Interactive Conformance Testing 29
  - 4.4.4 Interoperability Testing 29
  - 4.4.5 Proposed Testing Practices for SUTs 30
- **4.5 GITB Architecture** 31

Part II: Core Test Bed Implementation Specifications and Proof-of-Concept 34

5 Overview of Core Test Bed Implementation Specifications 34
- **5.1 Relevant Core Test Bed Service Specifications and Artifacts** 34
- **5.2 GITB Namespaces and Common Element Definitions** 35
  - 5.2.1 XML Schema for Common Elements 38

6 Test Presentation Language (TPL) 41
- **6.1 Abstract Model** 41
- **6.2 Test Step Identification** 43
- **6.3 XML Schema for TPL** 44

7 Test Reporting Format 46

This is a free page sample. Access the full version online.

7.1 Abstract Model ... **46**
7.1.1 XML Schema for Test Reporting Format ... 48

8 GITB Test Service Specifications ... **50**
8.1 Content Validation Service ... **50**
8.1.1 Service Overview ... 50
8.1.2 Abstract Service Description ... 50
8.1.2.1 ValidationClient Requests Module Definition ... 50
8.1.2.2 Validation ... 51
8.1.3 Web Service Description (WSDL) ... 51
8.1.4 XML Schema for Request/Response Messages ... 52
8.2 Messaging (Simulation) Service ... **52**
8.2.1 Service Overview ... 52
8.2.2 Abstract Service Description ... 54
8.2.2.1 Requesting Module Definition (GetModuleDefinition) ... 54
8.2.2.2 Initiating the Session (Initiate) ... 54
8.2.2.3 Initiating a Transaction (BeginTransaction) ... 54
8.2.2.4 Commanding Messaging Service to Send a Message (Send) ... 54
8.2.2.5 Notification of the Client for Received or Proxied Messages (NotifyForMessage callback) ... 55
8.2.2.6 Closing the Transaction (EndTransaction) ... 55
8.2.2.7 Closing the Session (Finalize) ... 55
8.2.3 Web Service Description (WSDL) for Messaging Service (Service Provider) ... 55
8.2.4 Web Service Description (WSDL) for Messaging Service Client (Service Consumer) ... 57
8.2.5 XML Schema for Request/Response Messages ... 58
8.3 Test Bed Service ... **59**
8.3.1 Service Overview ... 59
8.3.2 Abstract Service Description ... 61
8.3.2.1 Requesting Test Case Definition (GetTestcaseDefinition) ... 61
8.3.2.2 Initiating Test Process (Initiate) ... 61
8.3.2.3 Requesting Actor Definition (GetActorDefinition) ... 61
8.3.2.4 Configure Test Execution (Configure) ... 61
8.3.2.5 Initiate Preliminary Phase (InitiatePreliminary) ... 61
8.3.2.6 Providing User Input for Execution (ProvideInput) ... 62
8.3.2.7 Starting the Execution Phase (Start) ... 62
8.3.2.8 Status Updates for Testcase Execution (UpdateStatus callback) ... 62
8.3.2.9 User Interaction During Execution (InteractWithUsers callback) ... 62
8.3.2.10 Stopping the Execution (Stop) ... 62
8.3.2.11 Restarting the Execution Phase (Restart) ... 63
8.3.3 Web Service Description (WSDL) for Testbed Service (Service Provider) ... 63
8.3.4 Web Service Description (WSDL) for Testbed Service Client (Service Consumer) ... 66
8.3.5 XML Schema for Request/Response Messages ... 67

9 GITB Test Description Language (TDL) ... **69**
9.1 GITB Test Bed Concepts and Interfaces ... **69**
9.1.1 Basic Concepts ... 69
9.1.2 Type System and Expressions ... 69
9.1.3 Modularity for Specific Functionalities ... 70
9.2 Test Suite Definition ... **72**
9.3 Test Case Definition ... **72**
9.3.1 Namespace Declarations ... 73
9.3.2 Importing External Test Modules and Artifacts ... 73
9.3.3 Defining the Actors and Roles in the Test Case ... 74
9.3.4 Defining the Variables ... 74
9.3.5 Preliminary Phase for the Execution ... 74
9.3.6 Test Steps and Commands ... 75

This is a free page sample. Access the full version online.

9.3.7 Messaging Steps ... 76
9.3.8 Validation Step ... 77
9.3.9 User Interaction During Execution ... 78
9.3.10 Interim Computations ... 78
9.3.11 Test Flow Steps ... 78
9.3.12 Modular Test Scripting ... 79
9.3.13 Expressions and Bindings ... 79
9.4 XML Schema for TDL ... 80

10 GITB Proof of Concept (PoC) Test Bed Implementation ... 85
10.1 Software Architecture ... 85
10.1.1 GITB Testbed ... 86
10.1.2 GITB Testbed Modules ... 87
10.1.2.1 The Central Part of the GITB Testbed: gitb-core ... 87
10.1.3 GITB Execution Interface ... 104
10.1.3.1 How to Use the GITB POC Interface ... 104
10.1.3.2 REST API ... 110
10.2 Case Studies with POC Test Bed ... 111
10.2.1 UBL Use Case - Conformance Tests for PEPPOL BIS4A Specification ... 111
10.2.1.1 Test Suite Definition ... 111
10.2.1.2 Development of the Necessary Messaging Handlers ... 112
10.2.1.3 Definition of Test Artifacts ... 112
10.2.2 Using a GITB Compliant Validation Service Within A Test Case (here: Validex) ... 115
10.2.2.1 How to Integrate ... 115
10.2.2.2 Definition of the Test Case ... 116

11 GITB Compliance ... 117
11.1 GITB Compliance Levels ... 117
11.2 GITB Framework Compliance ... 118
11.3 GITB Service Compliance ... 121
11.4 GITB TDL Compliance ... 123

Part III: GITB Test Registry and Repository (TRR) Specifications and Prototype ... 124

12 GITB Test Registry and Repository (TRR) Specifications ... 124
12.1 Role of TRR in the GITB Architecture ... 124
12.2 User Classes and Roles ... 125
12.3 Basic Concepts ... 126
12.3.1 Testing Resources Managed by the TRR ... 126
12.3.2 Metadata ... 126
12.4 The Asset Description Metadata Schema application profile for TRR ... 127
12.4.1 Logical view of the metadata ... 128
12.4.2 Namespaces ... 128
12.4.3 Application Profile Classes ... 130
12.4.4 Application Profile Properties per Class ... 133
12.4.4.1 Asset ... 133
12.4.4.2 Asset Distribution ... 134
12.4.4.3 Test Bed ... 135
12.4.4.4 Test Capability Component ... 135
12.4.4.5 Test Logic Artifact ... 135
12.4.4.6 Test Suite ... 135
12.4.4.7 Test Case ... 136
12.4.4.8 Payload File ... 136
12.4.4.9 Messaging Adapter ... 136
12.4.4.10 Document Validator ... 136

This is a free page sample. Access the full version online.

12.4.4.11 Specification Type ... 136
12.4.4.12 Identifier ... 136
12.4.4.13 Publisher ... 137
12.4.4.14 Standardization Level ... 137
12.4.4.15 Representation Technique ... 137
12.4.5 Controlled Vocabularies to be Used ... 137
12.4.5.1 Specification Type of Asset ... 138
12.4.5.2 Representation Type of Asset Distribution ... 138
12.4.5.3 Standardization Level of Test Logic Artifact ... 140
12.5 Features ... 140
12.5.1 Overview ... 140
12.5.2 Concepts ... 142
12.5.3 Search Testing Resources ... 142
12.5.3.1 Typical searches ... 143
12.5.3.2 Examples of Search Queries and Their Answer ... 143
12.5.4 Testing Resources management ... 145
12.5.5 Secondary Features ... 145
12.5.5.1 Workspace and Folders Management ... 145
12.5.5.2 Bulletin board ... 146
12.5.5.3 General administration ... 146
12.6 Process View ... 147
12.7 External Interfaces ... 149
12.7.1 User Interfaces ... 149
12.7.2 Software Interfaces ... 149
12.7.3 Communications Interfaces ... 149

13 Test Registry and Repository (TRR) Prototype Implementation ... 150
13.1 Joinup ... 150
13.2 TRR in Joinup: Functional Specification ... 150
13.2.1 Use Case Diagram ... 150
13.2.2 Actors ... 151
13.2.2.1 Anonymous User ... 151
13.2.2.2 Joinup Member ... 151
13.2.3 Uses Cases ... 151
13.2.3.1 Search Testing Resources within the Joinup Platform ... 152
13.2.3.2 View Testing Resources ... 152
13.2.3.3 Create & Update Testing Resources ... 154
13.2.3.4 Delete Testing Resources ... 156
13.2.4 Fields of Testing Resources ... 156
13.2.4.1 Reused Fields ... 157
13.2.4.2 Updated Fields ... 157

Part IV: GITB Application and Validation based on Use Cases from Public Procurement, e-Health and Manufacturing Industries ... 159

14 Applying GITB in Use Cases ... 159
14.1 Approach ... 159
14.2 Deriving Testing Requirements ... 160
14.2.1 Verification Scope (“What to Test?”) ... 160
14.2.2 Operational Requirements (“In Which Environment?”) ... 162
14.3 Deriving Test Scenarios and Solutions ... 163

Part IV. 1: Public Procurement ... 165

15 OpenPEPPOL ... 165
15.1 Background and Testing Requirements ... 165

This is a free page sample. Access the full version online.

15.2 Verification Scope – What Should Be Tested? ... 166
15.2.1 Actors ... 166
15.2.2 Business Process ... 166
15.2.3 Underlying eBusiness Specifications / Standards ... 167
15.3 Testing Environment – How Should Be Tested? ... 167
15.3.1 Testing Integration in Business Environment ... 167
15.3.2 Testing Location ... 167
15.4 Test Scenario ... 168
15.4.1 Objectives and Success Criteria ... 168
15.4.2 Interaction Diagram/Choreography ... 168
15.4.2.1 Endpoint Lookup ... 168
15.4.2.2 Document Exchange ... 169
15.4.3 System Under Test (s) ... 169
15.4.4 Abstract Test Steps ... 169
15.5 Related Existing Test Artifacts/Tools/Services to Reuse in the Domain ... 170
15.5.1 Test Artifacts ... 170
15.5.2 Test Tools and Services ... 171
15.6 Related Stakeholders ... 171

16 eSENS ... 172
16.1 Background and Testing Requirements ... 172
16.2 Verification Scope – What Should Be Tested? ... 173
16.2.1 Actors and Roles ... 173
16.2.2 Business Process ... 173
16.2.3 Underlying eBusiness Specifications / Standards ... 174
16.3 Test Scenario ... 174
16.3.1 Objectives and Success Criteria ... 175
16.3.2 Interaction Diagram/Choreography ... 175
16.3.3 System Under Test (s) ... 175
16.3.4 Abstract Test Steps ... 176
16.4 Related Existing Test Artifacts/Tools/Services to Reuse in the Domain ... 177
16.4.1 Test Artifacts ... 177
16.4.2 Test Tools and Services ... 177
16.5 Related Stakeholders ... 177

17 Connecting Europe Facility (CEF) ... 177
17.1 Background and Testing Requirements ... 177
17.2 Verification Scope – What Should Be Tested? ... 178
17.2.1 Actors ... 178
17.2.2 Business Process ... 179
17.2.3 Underlying Standards/Specifications ... 179
17.3 Test Scenario ... 180
17.3.1 Objectives and Success Criteria ... 180
17.3.2 System Under Test (s) ... 181
17.3.3 Abstract Test Steps ... 181
17.4 Related Existing Test Artifacts/Tools/Services to Reuse in the Domain ... 181
17.4.1 Test Artifacts ... 182
17.4.2 Test Tools and Services ... 182
17.5 Related Stakeholders ... 182

18 Electronic Invoicing for the National Health Service (NHS) ... 183
18.1 Background and Testing Requirements ... 183
18.2 Verification Scope – What Should Be Tested? ... 183

This is a free page sample. Access the full version online.

18.2.1 Actors ... 183
18.2.2 Business Process ... 183
18.2.3 Standards and Specifications ... 183
18.3 Testing Environment – How Should Be Tested? ... 184
18.3.1 Testing Integration in Business Environment ... 184
18.3.2 Testing Location ... 184
18.4 Test Scenario ... 184
18.4.1 Objectives ... 184
18.4.2 System under Test (s) ... 185
18.4.3 Abstract Test Steps ... 187
18.4.3.1 Interoperability Testing ... 187
18.4.3.2 Interoperability and Conformance Test Cases for 3 Document Types ... 188
18.4.3.3 SML and SMP Test Cases ... 191
18.5 Existing Test Artifacts/Tools/Services to Reuse in the Domain ... 193
18.6 Stakeholders ... 193

Part IV. 2: e-Health ... 194

19 Clinical Document Architeture (CDA) ... 194
19.1 Background and Testing Requirements ... 194
19.2 Verification Scope – What Should be Tested? ... 194
19.2.1 Parties/Actors ... 195
19.3 Underlying eBusiness Specifications / Standards ... 196
19.4 Testing Scenarios ... 196
19.4.1 Objectives and Success Criteria ... 196
19.4.2 System Under Test (s) ... 196
19.4.3 Abstract Test Steps ... 197
19.4.3.1 Testing the content creator ... 197
19.4.3.2 Testing the content consumer ... 197
19.5 Related Existing Test Artifacts/Tools/Services to Reuse in the Domain ... 197
19.6 Related Stakeholders ... 197
19.7 Re-usability of Test artifacts/Tools/Services for GITB3 ... 198

20 IHE – Cross-Enterprise Document Sharing (XDS) ... 199
20.1 Background and Testing Requirements ... 199
20.2 Verification Scope – What to Test? ... 199
20.3 Actors ... 199
20.3.1 Interaction Diagram/Choreography ... 200
20.3.2 Underlying eBusiness Specifications / Standards ... 200
20.4 Details/Requirements of Test Scenario ... 201
20.4.1 Objectives and Success Criteria ... 201
20.4.2 System(s) Under Test ... 201
20.4.3 Abstract Test Steps ... 201
20.4.3.1 Testing the Document Source ... 201
20.4.3.2 Testing the Document Consumer ... 202
20.4.3.3 Testing the Document Repository ... 202
20.4.3.4 Testing the Document Registry ... 202
20.5 Related Existing Test Artifacts/Tools/Services to Reuse in the Domain ... 203
20.6 Related Stakeholders ... 204
20.7 Re-usability of Test Artifacts/Tools/Services for GITB3 ... 204

Part V: Manufacturing and Automotive ... 205

21 Electronic Invoicing Based on EDIFACT and OFTP2 ... 205
21.1 Background and Testing Requirements ... 205

This is a free page sample. Access the full version online.

21.2 Verification Scope 205
21.2.1 Actors 205
21.2.2 Business Documents 205
21.2.3 Standards and Specifications 205
21.3 Test Scenario 206
21.3.1 Test Objectives / Requirements 206
21.3.2 System under Test (s) 207
21.3.3 Abstract Test Steps 207
21.3.3.1 Document Validation 207
21.3.3.2 Messaging Operations 209
21.4 Existing Test Artifacts/Tools/Services to Reuse in the Domain 210
21.5 Stakeholders 210

22 Cross-Border Transactions 211
22.1 Background and Testing Requirements 211
22.2 Verification Scope 211
22.2.1 Actors 211
22.2.2 Business Document 211
22.2.3 Underlying Standards and Specifications 211
22.3 Test Scenario 211
22.3.1 Objectives and Success Criteria 211
22.3.2 System under Test (s) 211
22.3.3 Test Steps 211
22.4 Existing Test Artifacts/Tools/Services to Reuse in the Domain 212
22.5 Related stakeholders 212

23 Test Bed Interoperability with Application for a Truck Manufacturer 213
23.1 Background and Testing Requirements 213
23.2 Verification Scope 213
23.2.1 Parties/Actors 213
23.2.2 Standards and specifications 213
23.3 Test Scenario 213
23.3.1 Objectives 213
23.3.2 System under Test (s) 213
23.3.3 Abstract Test Steps 213
23.3.4 Validex Integration 214
23.4 Application in a Truck Manufacturer Test Scenario 215
23.5 Stakeholders 216

Bibliography 217

This is a free page sample. Access the full version online.

European foreword

CWA 16971 was developed in accordance with CEN-CENELEC Guide 29 "CEN/CENELEC Workshop Agreements – The way to rapid agreement" and with the relevant provisions of CEN/CENELEC Internal Regulations - Part 2. It was agreed on 2015-10-30 in a Workshop by representatives of interested parties, approved and supported by CEN following a public call for participation made on 2014-01-27. It does not necessarily reflect the views of all stakeholders that might have an interest in its subject matter.

The final text of CWA 16971 was submitted to CEN for publication on 2015-10-31. It was developed and approved by":

- Colinde
- Compliance Test Pty Ltd
- EHIBCC (European Health Industry BarCode Council
- ENEA
- European Commission, DIGIT unit B6
- FernUniversität in Hagen
- Netsend Limited
- Nexus IT
- RBS
- Sonnenglanz Consulting B.V.
- TeleTrusT – IT Security Association Germany
- TNO

The GITB Project Team was chaired by Asuman Dogac, SRDC (Software Research & Development and Consultancy Limited) and composed of:

- University of Lausanne, Faculty of Business and Economics, Department of Information Systems
- Midran ehf
- Invinet sistemes
- IHE Service
- SRDC, Software Research & Development and Consultancy Limited
- Engisis S.r.l.

Other contributors included:

- ISA Action 4.2.6 - Interoperability Test Bed

This is a free page sample. Access the full version online.

1 Executive Overview

Motivation

The work on GITB is motivated by the increasing need to support testing of eBusiness scenarios as a means to foster standards adoption, achieve better compliance to standards and greater interoperability within and across the various industry, governmental and public sectors. Without testing, it is cumbersome to reach interoperability of eBusiness implementations and to achieve conformance with standards specifications. More advanced testing methodologies and practices are needed to cope with the relevant set of standards for realizing comprehensive eBusiness scenarios (i.e. business processes and choreography, business documents, transport and communication protocols), as well as Test Beds addressing the specific requirements of multi-partner interactions.

GITB intends to increase the coordination between the manifold industry consortia and standards development organizations with the goal to increase awareness of testing in eBusiness standardization and to reduce the risk of fragmentation, duplication and conflicting eBusiness testing efforts. It thereby supports the goals of the European ICT standardization policy[1][2] to increase the quality, coherence and consistency of ICT standards and provide active support to the implementation of ICT standards.

Vision

The long-term objective is to establish a shared and Global eBusiness Interoperability Test Bed (GITB) infrastructure to support conformance and interoperability testing of eBusiness Specifications and their implementation by software vendors and end-users.

Objectives

The GITB project aims at

- developing the required **global Testing Framework, architecture and methodologies for state-of-the-art eBusiness Specifications and profiles** covering all layers of the interoperability stack (business processes, business documents, transport and communication);

- supporting the realization of GITB as a network of multiple Test Beds, thereby **leveraging existing and future testing capabilities from different stakeholders** (for example standards development organizations and industry consortia, Test Bed Providers, and accreditation / certification authorities);

- establishing under EU support and guidance, a **setup of a comprehensive and global eBusiness interoperability Test Bed infrastructure** in a global collaboration of European, North American and Asian partners.

GITB focuses on the architecture, methodology and guidelines for assisting in the creation, use and coordination of Test Beds. It is not intended to become an accreditation/certification authority or to impose a particular Test Bed implementation.

[1] COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL AND THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE A strategic vision for European standards: Moving forward to enhance and accelerate the sustainable growth of the European economy by 2020 COM(2011)311 final

[2] Regulation (EU) 1025/2012 on European Standardisation.

SAI GLOBAL

This is a free preview. Purchase the entire publication at the link below:

Product Page

Looking for additional Standards? Visit Intertek Inform Infostore

Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation