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# VIDP 2.0 Installation Manual

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| **Author(s):** | **Bojan Suzic** |
| **Partner(s) contributing :** | **AT-TUG** |

**Abstract**: This document describes the installation, configuration and administration of a VIDP.

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# List of abbreviations

| **<Abbreviation>** | **<Explanation>** |
|---|---|
| AQAA | Attribute Quality Authentication Assurance |
| AT | Austria |
| AP | Attribute Provider |
| BE | Belgium |
| CH | Switzerland |
| CZ | Czech Republic |
| EE | Estonia |
| eID | Electronic Identity |
| ES | Spain |
| EU | European Union |
| FR | France |
| GR | Greece |
| IS | Iceland |
| IT | Italy |
| LT | Lithuania |
| LU | Luxembourg |
| MS | STORK2.0 Member State |
| MW | MiddleWare |
| NL | The Netherlands |
| PEPS | Pan European Proxy Server |
| PT | Portugal |
| QAA | Quality Authentication Assurance |
| SAML | Security Assertion Markup Language |
| SE | Sweden |
| SI | Slovenia |
| SK | Slovakia |
| SP | Service Provider |
| STORK 2.0 | Secure idenTity acrOss boRders linKed 2.0 |
| TR | Turkey |
| UK | United Kingdom |
| V-IDP | Virtual Identity Provider |
| WP | Work Package |

# Executive summary

This document is targeting system administrators and operators, as well as the users of V-IDP system who will deploy or harden V-IDP systems at their local premises.

It provides quick reference on installation and configuration of V-IDP system. It covers the reference installation of preconfigured V-IDP system provided by Graz University of Technology and A-SIT Austria. Furthermore, the document explains the structure of V-IDP deployment archive, provides the steps necessary to execute during its separate deployment and configuration.

When you finish reading this document you should be able to install and configure V-IDP system, to gain better understating of its function and provide primary support in the case of troubleshooting.

# 1 Introduction

This document consists of two main parts.

The first part explains the structure and configuration of provided V-IDP reference system installation in the form of Debian Wheezy virtual machine.

The second part of the document provides the information on manual deployment of V-IDP system based on accompanying V-IDP deployment archive. It explains main steps involved in that process and provides hints and links to the settings already done and explained a the reference system.

For further questions, suggestions and comments please contact Austrian V-IDP team. Detailed contact informations are available at STORK 2 Wiki pages.

# 2 Configuration of V-IDP Virtual Machine

Austria provides all PEPS countries with reference virtual machine that can be used to easily deploy V-IDP system.

The virtual machine is based on Debian 7.4 distribution and contains optimal set of packages necessary to run the V-IDP services, including the following set of components:

- Linux kernel 3.2.0-4-amd64
- Sun Java SDK 1.7.0_51-b13
- Apache httpd 2.2.22-13
- Apache Tomcat 7.0.28-4
- Apache 2 mod_jk 1.2.37

The client HTTP(S) request coming to the V-IDP system are served by Apache httpd front-end server, which is installed and configured in its standard Debian flavor. It contains additional mod_jk module, which interfaces with backend Apache Tomcat server. The Apache Tomcat server instance included in this reference system contains all relevant modules belonging to the V-IDP. The installation is based on the one shipped with default Debian distribution, configured according to standard Debian practices.

Table 2 provides the list of configuration locations relevant for configured Apache Tomcat instance.

## 2.1 Apache httpd instance

The reference system runs **Apache 2** instance with **mod_jk** module. It acts as a frontend on standard HTTP(s) ports and using **mod_jk** connects to local Tomcat service running MOA-ID application.

| Path | Description |
|---|---|
| /etc/apache2/ | Base configuration directory |
| /etc/apache2/mods-enabled | Enabled modules, links to configuration of modules |
| /etc/apache2/ssl | Location for SSL certificates |
| /var/log/apache2 | Apache log files |

***Table 1: Relevant Apache httpd server and mod_jk paths***

The Apache2 instance can be started and stopped by issuing the following commands:

```
service apache2 stop

service apache2 start
```

The following figure provides the excerpt of configuration of **mod_jk** module.

```
    JkWorkersFile /etc/libapache2-mod-jk/workers.properties
    JkLogFile /var/log/apache2/mod_jk.log
    JkLogLevel info
    JkShmFile /var/log/apache2/jk-runtime-status
    JkWatchdogInterval 60
    <Location /jk-status>
        JkMount jk-status
        Order deny,allow
        Deny from all
        Allow from 127.0.0.1
    </Location>
    <Location /jk-manager>
        JkMount jk-manager
        Order deny,allow
        Deny from all
        Allow from 127.0.0.1
    </Location>
```

***Figure 1: Mod_jk configuration (excerpt)***

## 2.2 Apache Tomcat instance

The reference system runs **Apache Tomcat 7** instance containing the MOA applications. Table 2 provides the list and description of the most relevant paths of Tomcat installation.

| **Path** | **Description** |
|---|---|
| /usr/share/tomcat7 | Contains Tomcat binaries an libraries |
| /var/lib/tomcat7 | Contains shared and common files, deployment and directory for endorsed files |
| /var/lib/tomcat7/webapps | Contains Austrian authentication middleware |
| /etc/tomat7 | Configuration directory |
| /var/log/tomcat7 | Log files |

***Table 2: Relevant Apache Tomcat paths***

The Tomcat server contains web modules **ConfigurationInterface**, **moa-id-auth** and **bkuonline**, that basically build up the V-IDP system. They are by default deployed under **webapps** directory.

The following list briefly summarizes their role:

- **ConfigurationInterface**
  Provides the web based configuration interface for MOA. This interface is used to configure general MOA options, as well as to add and configure individual

online applications (service providers).

- **`moa-id-auth`**
  Set of software tools which provide implementation and integration support for the functions and procedures mandate by the Austrian eGov strategy. Contains integrated support for Stork 2 functionalities.

- **`bkuonline`**
  Modular Austrian citizen-card environment. Provides online module and interface interacting the user's citizen card.

The following table provides overview on deployed applications:

| **Path** | **URL** |
|---|---|
| `bkuonline` | https://testvidp.buergerkarte.at/bkuonline |
| `moa-id-auth` | https://testvidp.buergerkarte.at/moa-id-auth |
| `ConfigurationInterface` | https://testvidp.buergerkarte.at/ConfigurationInterface |

***Table 3: Paths and URLs of deployed applications***

## 2.3 Setting up and running Apache Tomcat instance

Before the Tomcat instance is initialized, the necessary environment variables are passed to the server and applications.

The following table contains the list of included variables. In reference installation they are found in the file **`/etc/tomcat7/set-variables.sh`**.

| **Variable** | **Description** |
|---|---|
| `LOGS_DIR` | Destination of log data |
| `CATALINA_OUT` | Log file containing Tomcat's standard output |
| `LOGS_BASE` | Base directory for other logs |
| `LOGGING_OPT` | Points to file containing logging configuration |
| `FILE_ENCODING` | Sets file encoding |
| `MOA_ID_CONFIG` | Location of base MOA-ID configuration file |
| `MOA_ID_CONFIG_TOOL` | Location of base MOA-ID web interface configuration file |
| `MOA_ID_STORK` | Location of STORK related files such as SAMLEngine configurations |
| `MOA_SPSS_CONFIG` | Points to MOA-SPSS configuration file |
| `MOA_SPSS_TSL_HASHCACHE` | Caching directory used by MOA-SPSS |
| `JAVA_ENDORSED_DIRS` | Path to endorsed directory |

***Table 4: Relevant variables***

The following two figures contain the excerpts from **/etc/tomcat7/set-variables.sh**. The parameters in this file are used to set and pass MOA-ID and other configuration options to MOA-ID running under Tomcat.

```
JAVA_HOME=/usr/lib/jvm/java

LOGS_DIR=/var/log/tomcat7/moaid-2.0
CATALINA_OUT=$LOGS_DIR/catalina.out
LOGS_BASE=-Dlogs.base=$LOGS_DIR

LOGGING_OPT=-Dlog4j.configuration=file:$CATALINA_BASE/conf/log4j.properties
FILE_ENCODING=-Dfile.encoding=UTF-8

RAND_FILE=-Djava.security.egd=file:/dev/urandom

MOA_ID_CONFIG=-Dmoa.id.configuration=$CATALINA_BASE/conf/moa-id/moa-id.properties
MOA_ID_CONFIG_TOOL=-Dmoa.id.webconfig=$CATALINA_BASE/conf/moa-id-
configuration/moa-id-configtool.properties
MOA_ID_STORK=-Deu.stork.samlengine.config.location=$CATALINA_BASE/conf/moa-
id/stork/

MOA_SPSS_CONFIG=-Dmoa.spss.server.configuration=$CATALINA_BASE/conf/moa-
spss/MOASPSSConfiguration.xml
MOA_SPSS_TSL_HASHCACHE=-
Diaik.xml.crypto.tsl.BinaryHashCache.DIR=$CATALINA_BASE/conf/moa-
spss/tslworking/hashcache/

JAVA_ENDORSED_DIRS=$CATALINA_BASE/endorsed
```

***Figure 2: Definition of variables (excerpt)***

```
JAVA_OPTS="$LOGS_BASE $FILE_ENCODING $LOGGING_OPT $MOA_ID_CONFIG $MOA_SPSS_CONFIG
$MOA_ID_CONFIG_TOOL -Dsun.security.ssl.allowUnsafeRenegotiation=true $RAND_FILE
-XX:PermSize=64m -XX:MaxPermSize=786m $MOA_ID_STORK"

JVM_OPTS="$FILE_ENCODING;$LOGGING_OPT;$MOA_ID_CONFIG;$MOA_SPSS_CONFIG;$MOA_ID_CON
FIG_TOOL;-Dsun.security.ssl.allowUnsafeRenegotiation=true;$RAND_FILE;
-XX:PermSize=64m;-XX:MaxPermSize=786m;$MOA_ID_STORK"

CATALINA_OPTS="$LOGGING_OPT $FILE_ENCODING $MOA_ID_CONFIG $MOA_SPSS_CONFIG
$MOA_SPSS_TSL_HASHCACHE $PARAM_TRUST_STORE $PARAM_TRUST_STORE_PASS
$PARAM_TRUST_STORE_TYPE $PARAM_SSL_DEBUG $MOA_ID_CONFIG_TOOL -
Dsun.security.ssl.allowUnsafeRenegotiation=true $RAND_FILE -XX:MaxPermSize=786m
$MOA_ID_STORK"
```

***Figure 3: Passing variables to Tomcat (excerpt)***

The Tomcat7 instance can be started and stopped by issuing the following commands:

```
service tomcat7 stop

service tomcat7 start
```

## 2.4 MOA-ID configuration files

The Table 5 presents the list of MOA-ID and related paths, as well as brief explanations on their contents. The referenced directories are available under Tomcat configuration directory – in the case of reference system it is **`/etc/tomcat7`**.

| **Path** | **Description** |
|---|---|
| `moa-id` | The base directory for MOA-ID configuration |
| `moa-id/keys` | Contains keystore used by SAMLEngine |
| `moa-id/stork` | Contains STORK related SAMLEngine configuration files |
| `moa-id-configuration` | Configuration of MOA-ID web configuration interface, as well as templates and transformations |
| `moa-spss` | MOA-SPSS directory containing MOA-SPSS configuration, trust and cert store as well as transformation profiles |

***Table 5: Configuration of MOA components***

# 3 Configuration of V-IDP and its components

This section presents the configuration of V-IDP software components.

All references to specific files or directories in this section are based on reference installation provided in the form of V-IDP virtual machine, as introduced in Section 2: Configuration of V-IDP Virtual Machine. Therefore, these paths should be adjusted correctly in the case of specific configuration based on manual deployment and installation of modules.

## 3.1 Preparing basic MOA configuration

Before MOA instance is started, it is necessary to review and configure its configuration parameters available under `/etc/tomat7/moa-id/moa-id.properties`. This file provides basic configuration which is necessary to start MOA service.

This file contains some parameters which are used in specific scenarios relevant for providers using other types of interfaces or authentication, internally in Austria. In the context of Stork 2 deployment, most of these parameters are not used and there for not relevant. The following table lists the most relevant parameters for deployment case in the terms of Stork 2 scenario:

| | | |
|---|---|---|
| Parameter | | `configuration.moasession.key` |
| | Example | `MyKey123` |
| | Description | Passphrase used to encrypt the session data in database. Optional. |
| Parameter | | `Configuration.monitoring.active` |
| | Example | `true` |
| | Description | Defines the status of monitoring servlet |
| Parameter | | `Configuration.monitoring.message.success` |
| | Example | `True` |
| | Description | Success message sent in case of passing the tests |
| Parameter | | `Configuration.monitoring.test.identitylink.url` |
| | Example | `/test/idl/test_identitylink.xml` |
| | Description | URL of IdentityLink used for testing |
| Parameter | | `configuration.advancedlogging.active` |
| | Example | `true` |
| | Description | Defines the status of additional logging facilities (in database) |

***Table 6: MOA-ID basic configuration***

The next table contains description of database configuration parameters on MOA-ID related to session data store, configuration and statistics data store.

| | | |
|---|---|---|
| Parameter | | `moasession.hibernate.dialect` |
| | Example | `org.hibernate.dialect.MySQLDialect` |
| | Description | Dialect used to communicate with MOA-session data store |
| Parameter | | `moasession.hibernate.connection.url` |
| | Example | `jdbc:mysql://localhost/moa-id-session?charSet=utf-8&autoReconnect=true` |
| | Description | URL to MOA-session database schema |
| Parameter | | `moasession.hibernate.connection.driver_class` |
| | Example | `com.mysql.jdbc.Driver` |
| | Description | Driver used to access session database |
| Parameter | | `moasession.hibernate.connection.username` |
| | Example | `moasession` |
| | Description | The user name used to access the session database |
| Parameter | | `moasession.hibernate.connection.password` |
| | Example | `moapassword` |
| | Description | The password used to access the session database |
| Parameter | | `configuration.hibernate.dialect` |
| | Example | `org.hibernate.dialect.MySQLDialect` |
| | Description | Dialect used to communicate with MOA-configuration data store |
| Parameter | | `configuration.hibernate.connection.url` |
| | Example | `jdbc:mysql://localhost/moa-id-config?charSet=utf-8&autoReconnect=true` |
| | Description | URL to MOA-config database schema |
| Parameter | | `configuration.hibernate.connection.driver_class` |
| | Example | `com.mysql.jdbc.Driver` |
| | Description | Driver used to access config database |
| Parameter | | `configuration.hibernate.connection.username` |
| | Example | `moaconfiguser` |
| | Description | The user name used to access the database |
| Parameter | | `moasession.hibernate.connection.password` |

| | | |
|---|---|---|
| | Example | moaconfigpassword |
| | Description | The password used to access the database |
| Parameter | | advancedlogging.hibernate.dialect |
| | Example | org.hibernate.dialect.MySQLDialect |
| | Description | Dialect used to communicate with data store for MOA advanced logging |
| Parameter | | advancedlogging.hibernate.connection.url |
| | Example | jdbc:mysql://localhost/moa-id-statistics?charSet=utf-8&autoReconnect=true |
| | Description | URL to advanced logging database schema |
| Parameter | | advancedlogging.hibernate.connection.driver_class |
| | Example | com.mysql.jdbc.Driver |
| | Description | Driver used to access advanced logging database |
| Parameter | | advancedlogging.hibernate.connection.username |
| | Example | moaloguser |
| | Description | The user name used to access the advanced statistics database |
| Parameter | | moasession.hibernate.connection.password |
| | Example | moalogpassword |
| | Description | The password used to access the advanced statistics database |

***Table 7: MOA-ID database configuration***

## 3.2 Preparing MOA configuration interface

The module for MOA web configuration interface is started separately. Its basic configuration can be adjusted under `/etc/tomcat7/moa-id-configiguration/moa-id-configtool.properties`. All other application relevant parameters are further defined in this configuration interface. The following table provides description of most relevant parameters in this file.

| | | |
|---|---|---|
| Parameter | | general.login.deaktivate |
| | Example | false |
| | Description | With this option login using web interface can be deactivated. |
| Parameter | | general.publicURLContext |
| | Example | https://testvidp.buergerkarte.at/ConfigurationInterface |
| | Description | This is the URL of web configuration interface |

| | | |
|---|---|---|
| Parameter | | `general.defaultlanguage` |
| | Example | de |
| | Description | Defines default language for web configuration interface |
| Parameter | | `general.mail.host` |
| | Example | `mail.testvidp.buergerkarte.at` |
| | Description | The mail server used to send the emails |
| Parameter | | `general.mail.from.name` |
| | Example | `TestVIDP System` |
| | Description | The name of the sender of emails |
| Parameter | | `general.mail.from.address` |
| | Example | `admin@testvidp.buergerkarte.at` |
| | Description | The *from* address used when sending emails from the host |
| Parameter | | `general.mail.useraccountrequest.verification.subject` |
| | Example | `MOA-ID User verification` |
| | Description | Subject of verification email sent when opening account |
| Parameter | | `general.mail.useraccountrequest.verification.template` |
| | Example | `mail/verification_template.html` |
| | Description | Location of the verification's email template |
| Parameter | | `general.mail.useraccountrequest.isactive.subject` |
| | Example | `MOA-ID User Activation` |
| | Description | Subject of activation mail sent after the account is activated |
| Parameter | | `general.mail.useraccountrequest.isactive.template` |
| | Example | `mail/activation_template.html` |
| | Description | Location of the activation's email template |
| Parameter | | `general.mail.useraccountrequest.rejected.template` |
| | Example | `mail/rejected_template.html` |
| | Description | Location of the template used to inform the user about rejection or removal of its requested account. |
| Parameter | | `general.mail.createOArequest.isactive.subject` |
| | Example | `MOA-ID Service Provider Activation` |
| | Description | Subject of activation mail for service provider (online application) |

| Parameter | | general.mail.createOArequest.isactive.template |
|---|---|---|
| | Example | mail/oa_activation_template.html |
| | Description | Location to the template used for service provider activation email |
| Parameter | | general.mail.admin.adress |
| | Example | admin@testvidp.buergerkarte.at |
| | Description | Email address of system admin |
| Parameter | | general.mail.admin.subject |
| | Example | MOA-ID Status information |
| | Description | Subject of status information message |
| Parameter | | general.mail.admin.adresses.template |
| | Example | mail/admin_template.html |
| | Description | Location of status information/change template sent to the admin |

***Table 8: Web interface configuration for MOA-ID***

In the following table described are database specific configuration parameters:

| Parameter | | hibernate.dialect |
|---|---|---|
| | Example | org.hibernate.dialect.MySQLDialect |
| | Description | The SQL dialect used to store configuration |
| Parameter | | hibernate.connection.url |
| | Example | jdbc:mysql://localhost/moa-id-config?charSet=utf-8&autoReconnect=true |
| | Description | URL used to access the database (configuration store) |
| Parameter | | hibernate.connection.driver_class |
| | Example | com.mysql.jdbc.Driver |
| | Description | Driver class used to access the database |
| Parameter | | hibernate.connection.username |
| | Example | Vidp |
| | Description | The username used to access the database |
| Parameter | | hibernate.connection.password |
| | Example | Vidppass |
| | Description | The password used to access the database |

***Table 9: MOA-ID web configuration interface database configuration***

## 3.3 Configuring specific Stork support for MOA

Common SAMLEngine developed in the course of STORK project is used for the signing and verification of STORK SAML messages. Its specific configuration files can be found under `/etc/tomcat7/moa-id/stork`.

The main file for defining sub-configurations located in this directory is `SamlEngine.xml`. This file defines and references instance configurations for each profile used in the application.

The following is snippet excerpt from SamlEngine.xml:

```
<instance name="VIDP">
 <!-- Configurations parameters StorkSamlEngine  -->
 <configuration name="SamlEngineConf">
  <parameter name="fileConfiguration" value="StorkSamlEngine_VIDP.xml" />
 </configuration>
 <!-- Settings module signature-->
 <configuration name="SignatureConf">
  <!-- Specific signature module -->
  <parameter name="class" value="eu.stork.peps.auth.engine.core.impl.SignSW" />
  <!-- Settings specific module -->
  <parameter name="fileConfiguration" value="SignModule_VIDP.xml" />
 </configuration>
</instance>
```

***Figure 4: SamlEngine general configuration***

In this example, the instance references two additional files, `StorkSamlEngine_VIDP.xml` and `SignModule_VIDP.xml`. Each configuration in the system requires such instance designation and further definition of particular `SamlEngine` and `SignatureEngine` subsections. In `SamlEngine` configuration contained are the attribute definitions and other settings – there is generally no need to adjust those files. On the other hand, `SignatureEngine` contains settings necessary to access keystore used to sign and verify SAML messages.

The following is snippet excerpt from that file:

```
<properties>
 <comment>SWModule sign with JKS.</comment>
 <entry key="keystorePath">/etc/tomcat7/moa-id/keys/storkDemoKeys.jks</entry>
 <entry key="keyStorePassword">change-me</entry>
 <entry key="keyPassword">change-me</entry>
 <entry key="issuer">C=AT, L=Graz, OU=Test Institute, CN=EuroPKI CA</entry>
 <entry key="serialNumber">2FCAA2CDB1522</entry>
 <entry key="keystoreType">JKS</entry>
</properties>
```

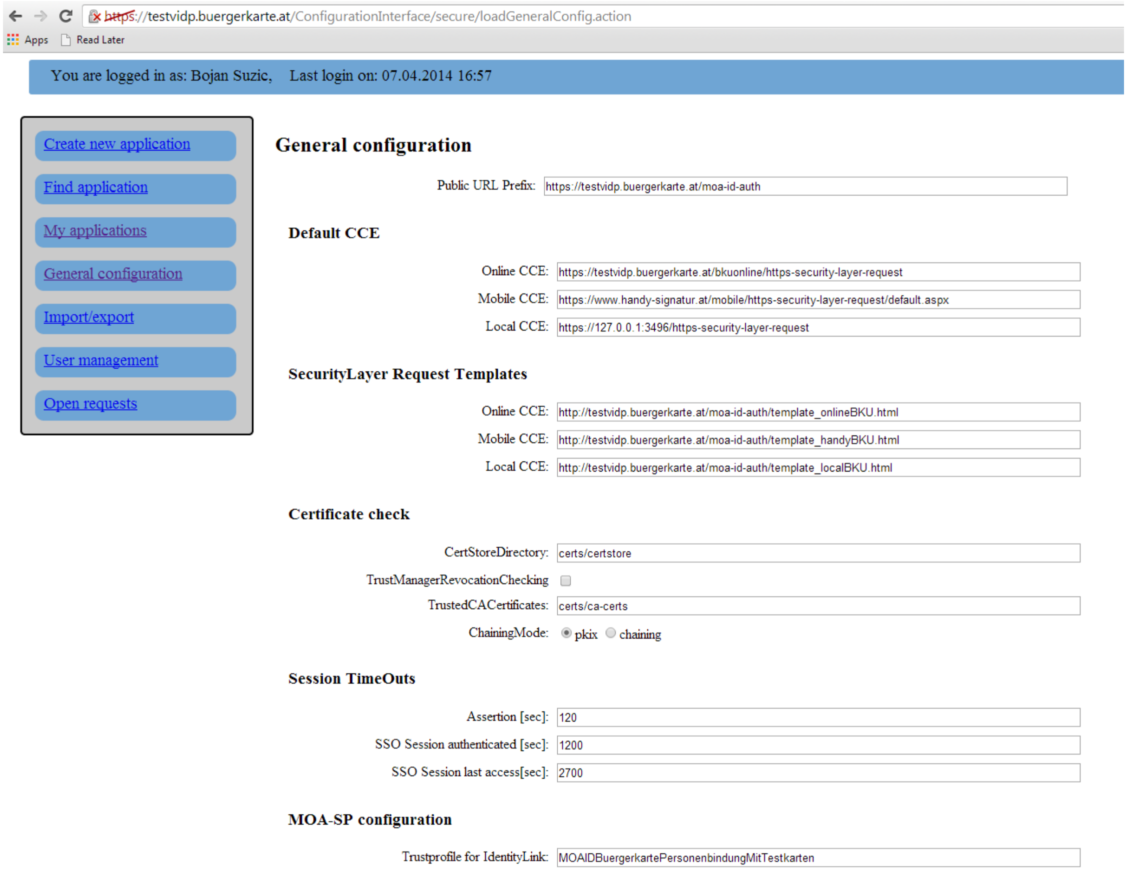
***Figure 5: Saml Signature Engine configuration***

Generally nearly all the lines from the previous configuration snippet should be adjusted in order to reflect local configuration.

Referenced keystore should contain trust certificates from other trusted parties, such as PEPSes, and private key used to sign message delivered to the peers.

## 3.4 General MOA configuration

General configuration in MOA is accessed through web configuration interface of MOA-ID. By default, this interface is located at `https://vidp-domain.tld/ConfigurationInterface`.



~~https~~://testvidp.buergerkarte.at/ConfigurationInterface/secure/loadGeneralConfig.action

You are logged in as: Bojan Suzic, Last login on: 07.04.2014 16:57

**General configuration**

Public URL Prefix: https://testvidp.buergerkarte.at/moa-id-auth

**Default CCE**

Online CCE: https://testvidp.buergerkarte.at/bkuonline/https-security-layer-request
Mobile CCE: https://www.handy-signatur.at/mobile/https-security-layer-request/default.aspx
Local CCE: https://127.0.0.1:3496/https-security-layer-request

**SecurityLayer Request Templates**

Online CCE: http://testvidp.buergerkarte.at/moa-id-auth/template_onlineBKU.html
Mobile CCE: http://testvidp.buergerkarte.at/moa-id-auth/template_handyBKU.html
Local CCE: http://testvidp.buergerkarte.at/moa-id-auth/template_localBKU.html

**Certificate check**

CertStoreDirectory: certs/certstore
TrustManagerRevocationChecking ☐
TrustedCACertificates: certs/ca-certs
ChainingMode: ● pkix ○ chaining

**Session TimeOuts**

Assertion [sec]: 120
SSO Session authenticated [sec]: 1200
SSO Session last access[sec]: 2700

**MOA-SP configuration**

Trustprofile for IdentityLink: MOAIDBuergerkartePersonenbindungMitTestkarten

***Figure 6: Example general configuration interface screen***

Figure 6 shows the web page of configuration interface, located in general configuration section of MOA-ID.

The following subsections contain most important options for Stork based system setup.

### 3.4.1 Public URL Prefix

| Parameter | | `Public URL Prefix` |
|---|---|---|
| | Example | `https://testvidp.buergerkarte.at/moa-id-auth` |
| | Description | URL-Prefix of MOA-ID instance. This setting is used for automatic generation of forms and information and must be defined. |

***Table 10: MOA-ID general configuration***

In this section defined are the parameters for standard Citizen Card Environment. They are used by MOA-ID in the authentication process in the case there is no specific CCE defined for particular service provider.

| Parameter | | `Online CCE` |
|---|---|---|
| | Example | `https://testvidp.buergerkarte.at/bkuonline/https-security-layer-request` |
| | Description | URL to the Online-CCE instance |
| Parameter | | `Mobile CCE` |
| | Example | `https://www.handy-signatur.at/mobile/https-security-layer-request/default.aspx` |
| | Description | URL to the Mobile-CCE instance |
| Parameter | | `Local CCE` |
| | Example | `https://127.0.0.1:3496/https-security-layer-request` |
| | Description | URL pointing to the locally installed and executed CCE instance |

***Table 11: Citizen Card Environments used by MOA-ID globally***

### 3.4.2 SecurityLayer Request Templates

Security Layer Templates are used in the communication with previously configured Citizen Card Environment. The communication is based on HTTP Form, which is sent to the Citizen Card Environment through HTTP POST Request.

Necessary templates are included as a part of V-IDP distribution. They can be further customized and configured, however that is out of scope of this setup.

| Parameter | | `Online CCE` |
|---|---|---|
| | Example | `http://testvidp.buergerkarte.at/moa-id-auth/template_onlineBKU.html` |
| | Description | SL Template for communication with Online-CCE |
| Parameter | | `Mobile CCE` |
| | Example | `http://testvidp.buergerkarte.at/moa-id-auth/template_handyBKU.html` |
| | Description | SL Template for communication with Mobile-CCE |
| Parameter | | `Local CCE` |
| | Example | `http://testvidp.buergerkarte.at/moa-id-auth/template_localBKU.html` |
| | Description | SL Template for communication with local CCE instance |

***Table 12: Security Layer templates used by Citizen Card Environment***

### 3.4.3 Certificate check

In this section considered are general settings for certificate check and the configuration of trusted certificates. Referenced directories are relative to MOA-ID configuration directory – in the case of this reference installation it is **`/etc/tomcat7/moa-id`**.

| | | |
|---|---|---|
| Parameter | | `CertStoreDirectory` |
| | Example | `certs/certstore` |
| | Description | Path name to the directory containing trust store used in the course of TLS server based certificate check. |
| Parameter | | `TrustManagerRevocationChecking` |
| | Example | `false` |
| | Description | For TLS server based authentication there can be used only server certificates containing CRLDP extension. If there is no CRLDP extension contained, MOA-ID would not be able to perform CRL based check. If `RevocationChecking` is disabled, this setting should be set to `false`. |
| Parameter | | `TrustedCACertificates` |
| | Example | `certs/ca-certs` |
| | Description | Path to the directory containing trusted CA certificates. In the course of TLS server based certificate check these CA would be considered as trusted. |
| Parameter | | `Chaining Mode` |
| | Example | `pkix` |
| | Description | This option defines if the certificate check method would be based on `chaining` or on RFC 3280 `pkix`. |

***Table 13: Configuration of trusted certificates***

### 3.4.4 Session timeouts

This subsection defines general timeouts used in the system, expressed in seconds.

| | | |
|---|---|---|
| Parameter | | `Assertion` |
| | Example | `120` |
| | Description | Defines the time window for authentication data, session data or assertions contained in the system to be considered as valid. After this time is passed the data will be removed or the authentication process canceled.This setting influences the maximal time allowed to collect additional STORK attributes. |
| Parameter | | `SSO Session authenticated` |
| | Example | `1200` |

| | | |
|---|---|---|
| | Description | Defines time window for validity of Single Sign-On session, starting from the time point of authentication. After the expiration of this period, the user will have to authenticate again. |
| Parameter | | `SSO Session last access` |
| | Example | `2700` |
| | Description | Defines time window for validity of Single Sign-On session, starting from the time point of the last access. After the expiration of this period, the user will have to authenticate again. |

***Table 14: Session timeouts configuration***

### 3.4.5 MOA-SPSS Configuration

This sections defines relevant parameters for configuring the options of MOA-SP module, which is used for checking of signature of identity link and authentication block. This module is shipped a part of MOA-ID and in Stork based scenario should generally not be adjusted.

| | | |
|---|---|---|
| Parameter | | `Trustprofile for Identity Link` |
| | Example | `MOAIDBuergerkartePersonenbindungMitTestkarten` |
| | Description | This element specifies TrustProfileID used during verification of signature of the identity link, a part of signature request. The same TrustProfileID must be configured in the corresponding MOA-SP module. |
| Parameter | | `Trustprofile for authentication block` |
| | Example | `MOAIDBuergerkarteAuthentisierungsDatenMitTestkarten` |
| | Description | This element specifies TrustProfileID used during verification of signature of the authentication block, a part of signature request. The same TrustProfileID must be configured in the corresponding MOA-SP module. |
| Parameter | | `Transformations for authentication block` |
| | Example | `MOAIDTransformAuthBlockTable_DE_new` |
| | Description | This option defines ID of transformations profile, used during the verification of the signature of authentication block. The same transformation profile must be configured in the corresponding MOA-SP module. |
| Parameter | | `URL for MOA-SP service` |
| | Example | `http://testinstance.tld/moaspss` |
| | Description | URL of the used MOA-SP service. Optional.<br>If this option is not configured, the MOA-ID will use the integrated version of MOA-SP. The MOA-SP configuration can be found under `/etc/tomcat7/moa-spss/MOASPSSConfiguration.xml`. |

***Table 15: MOA-SPSS configuration parameters***

### 3.4.6 External Services

The following parameters are used for communication with external services such as online mandating service and source-PIN registry. These parameters should be configured only in special cases.

| | | |
|---|---|---|
| Parameter | | Online-Mandate Service URL |
| | Example | https://vollmachten.egiz.gv.at/mis-test/MandateIssueRequest |
| | Description | URL of online mandating service |
| Parameter | | SZR Gateway Service URL |
| | Example | https://szrgw.egiz.gv.at/services_2.0/IdentityLinkCreation |
| | Description | URL of source-PIN registry |

*Table 16: Configuration of external services*

### 3.4.7 Single Sign-On

The options in this section define the parameters necessary for implementation of single sign-on functionality.

| | | |
|---|---|---|
| Parameter | | SSO Service Name: |
| | Example | |
| | Description | |
| Parameter | | SSO Service Target |
| | Example | |
| | Description | |
| Parameter | | SSO Auth Block Text |
| | Example | |
| | Description | |

*Table 17: Configuration of Single Sign-On parameters*

### 3.4.8 Secure Identity Accross Borders Linked

The parameters from this section specify the settings directly relevant for Stork deployment.

In this section it is possible to define **standard QAA-Level** of requests, which sets minimal requirements for QAA.

Further, for each relevant **country** the appropriate **C-PEPS URL** should be entered.

The next available setting is **configuration of attributes**. In this subsection defined are generally supported STORK attributes, such as eIdentifier, givenName and others. The field **mandatory** is used to mark the attributes which must be included in the response from PEPS.

### 3.4.9 Logging

This subsection allows specific settings for logging configuration. These are not relevant for STORK based deployments.

### 3.4.10 Security Layer Transformations

The SL-Transformations are used by MOA-ID to create the signature of authentication block. The transformation file should be separately uploaded through this interface. The standard configuration is available under:

**`/etc/tomcat/moa-id/transforms/TransformsInfoAuthBlockTable_DE_new.xml.`**

## 3.5 Setting up particular service provider

The configuration of service provider[1] is initiated from the main web-interface menu, under the option `Create new application`. The list of available applications can be invoked through the option **`My applications`**. Furthermore, the service provider configuration is generally done by the users with administrator rights, but the basic settings for particular applications can be also done by other users registered in the system.

### 3.5.1 Basic Settings

This section defines the basic and parameters of service provider, such as its name and URL.

| Parameter | | `Online-Application is activated` |
|---|---|---|
| | Example | `true` |
| | Description | Allows to activate and deactivate service provider application. |
| Parameter | | `Unique identifier (PublicURLPrefix):` |
| | Example | `https://peps-test.gov.tld/SP/ReturnPage` |
| | Description | This parameter is used to distinguish service provider applications and find/retrieve the specific one. The identificator should contain at least the URL prefix of externally visible and reachable service provider application |
| Parameter | | `Name of the Online-Application:` |
| | Example | `Demo SP` |
| | Description | User defined name of service provider. It is shown during user authentication process. |

[1] In this document referred also as an *online application*

| | | |
|---|---|---|
| Parameter | | `Private sector application` |
| | Example | `true` |
| | Description | This parameter should be set to true for STORK service providers |
| Parameter | | `Identification number:` |
| | Example | `STORK IT` |
| | Description | This parameter is mandatory and servers to set the SP country. |

***Table 18: Basic settings for service provider application***

### 3.5.2 CCE Configuration

| | | |
|---|---|---|
| Parameter | | `Online CCE` |
| | Example | `https://testvidp.buergerkarte.at/bkuonline/https-security-layer-request` |
| | Description | URL to the application specific Online-CCE instance.<br>If no instance is configured, the default one from the MOA-ID general configuration is applied. |
| Parameter | | `Mobile CCE` |
| | Example | `https://www.handy-signatur.at/mobile/https-security-layer-request/default.aspx` |
| | Description | URL to the application specific Mobile-CCE instance.<br>If no instance is configured, the default one from the MOA-ID general configuration is applied. |
| Parameter | | `Local CCE` |
| | Example | `https://127.0.0.1:3496/https-security-layer-request` |
| | Description | URL pointing to the locally installed and executed CCE instance. If no parameter is set, the default one from the MOA-ID general configuration is used. |
| Parameter | | `KeyBoxIdentifier` |
| | Example | `SecureSignatureKeypair` |
| | Description | Configures keypair used to sign the authentication block. Default value is SecureSignatureKeypair. |
| Parameter | | `SecurityLayerTemplates (Legacy Request)` |
| | Example | `false` |
| | Description | Using this option it is possible to define additional three SecurityLayer templates. In STORK related deployments this selector should be left unchecked. |
| Parameter | | `CCE-Selection Template` |
| | Example | `<uploaded file>` |

| | |
|---|---|
| Description | This parameter allows setting of the application specific CCE selection template. This template may be additionally customized and uploaded using this box. If applied, this template should be additionally checked for security (e.g. XSS attack). |
| Parameter | `Send-Assertion Template` |
| Example | `<uploaded file>` |
| Description | This option allows setting of application specific template for additional authentication request in the case of single sign-on login. |

*Table 19: Citizen Card Environment settings for service provider application*

### 3.5.3 Mandates

This subsection allows definition of mandating schemas used in the authentication process.

| Parameter | `Mandates` |
|---|---|
| Example | `true` |
| Description | This setting defines if the service provider application supports online-mandates. If this box is checked, the option to log in as representative will be shown during authentication process at the CCE selection step. |
| Parameter | `Profile` |
| Example | `Gesundheit,Zustellung,ERsB,GeneralvollmachtBilateral` |
| Description | This element contains the comma-separated list of mandating profiles. The full list is available under https://vollmachten.stammzahlenregister.gv.at/mis. |
| Parameter | `Allow mandated login only` |
| Example | `false` |
| Description | Allows setting the possibility to accept authentication based on powers only. |

*Table 20: Mandates supported by service provider application*

### 3.5.4 Single Sign-On

This section contains single sign-on relevant settings for service provider application. If the option **`Use Single Sign-On`** is enabled, then current service provider application takes part in the single sign-on service of MOA-ID instance used for authentication.

**`Additional user request`** is used to activate additional user confirmation in the case of single sign-on based authentication. Therefore, the user is informed and consented that the login is based on SSO.

### 3.5.5 Secure Identity Accross Borders Linked

The parameters from this section specify STORK protocol relevant settings for service provider application.

**`Activate STORK Login`** parameter is used when the service provider application needs to support the login of the user from other countries. This way, on the login web page the option `Home Country Selection` will be enabled.

In this section it is further possible to define **`standard QAA-Level`** of requests, which sets minimal requirements for QAA of current service provider.

The next subsection defines supported user countries and their C-PEPSes, among the ones preconfigured in `General Settings` of MOA-ID.

The next available setting is configuration of **`requested attributes`**. Here defined is support for service provider application specific STORK attributes. These attributes are defined under `General Settings` of MOA-ID. The field **`mandatory`** defines which attributes must be provided by PEPSes.

### 3.5.6 Authentication protocols

The button **`VIDP Configuration`** enables showing and hiding of the configuration settings specific for VIDP environment. Under these settings the option **`VIDP interface is active`** is used to activate VIDP support; it should be normally activated.

The option **`Ask the user for attributes transfer consent`** is applied to activate the user consent request before the user attributes are transferred to peer entity such as PEPS in cross-border scenario.

Additionally, there is possibility to define the attribute providers used to retrieve specific types of attributes requested by service providers. The supported attributes (comma separated list) should be configured for each attribute provider in the field **`Attribute (CSV)`**, for example: **`mandateContent,attribute2`**.

The following table contains the description of currently supported attribute providers.

| | | |
|---|---|---|
| Plugin Name | | `EHvdAttributeProvider` |
| | Example | `http://ehvdtest.buergerkarte.at/RetreveAttribute` |
| | Description | Used in the health domain. |
| Parameter | | `SignedDocAttributeRequestProvider` |
| | Example | `http://testvidp.buergerkarte.at/RetreveAttribute` |
| | Description | Used to support document signing using `signDoc` attribute. |
| Parameter | | `MISAttributeRequestProvider` |
| | Example | `http://mistest.buergerkarte.at/moa-id-auth/MISProvider` |
| | Description | Used to enable support of authentication in powers. |
| Parameter | | `StorkAttributeRequestProvider` |

| | | |
|---|---|---|
| | Example | `http://testvidp.buergerkarte.at/RetreveAttribute` |
| | Description | General plugin, used for other cases. |

***Table 21: Attribute providers settings***

### 3.5.7 Additional general settings

This optional section enables service providers to provide customized, service provider application specific authentication block and citizen card environment selection form.

The option **`Hide bPK/wbPK from AuthBlock`** enables exclusion of bPK and wbPK from the authentication block presented to the user to sign.

The field **`AuthblockText`** should contain the customized service provider specific text. This text will be signed from the user in the course of authentication. The text may consist of characters, numbers und punctuation marks. It can contain the following keywords too:

- #NAME# - will be replaced with first and family name of the user
- #DATE# - will be replaced with the actual date
- #TIME# - will be replaced with the actual time

The example **`Authblocktext`** is represented with the following figure:

```
With this action I, #NAME#, confirm at #DATE# on #TIME# o'clock the
reception of the information package.
```

***Figure 7: Example AuthBlockText configuration***

This text setting will be replaced into the following text and signed by the user in the course of authentication:

```
With this action I, John Doe, confirm at 05.01.2014 on 10:00 o'clock
the reception of the information package.
```

***Figure 8: Example transformation result of customized AuthTextBlock***

### 3.5.8 Configuration of forms

The button **`Show configuration of login`** window activates the additional configuration fields for login window presented to the users.

TBF

## 3.6 Other functionality of MOA-ID web configuration interface

## 3.7 Configuring BKUOnline

BKUOnline is separate application serving as an online Citizen Card Environment. It is used in the authentication process as a component loaded in the user's browser as a Java applet. Based on the request initiated by service provider's application it establishes communication with user's citizen card (smart card environment) and performs all authentication and signature related tasks.

### 3.7.1 Adjusting configuration file

The **file** **/var/lib/tomcat7/webapps/bkuonline/WEB-INF/conf/configuration.xml** contains basic configuration elements necessary to be reviewed before the BKUonline is used in productive system.

**Whitelist** section of this file contains the list of allowed **DataURLs**, e.g. the hosts which are allowed to call this instance of BKUOnline.

```
<Whitelist>
  https://www\.formularservice\.gv\.at/BKU/.*,
  https?://127\.0\.0\.1/.*,
  https?://localhost/.*,
  https://testvidp.buergerkarte.at/.*
</Whitelist>
```

***Figure 9: BKUOnline whitelist hosts***

```
<Whitelist>
  https://www\.formularservice\.gv\.at/BKU/.*,
  https?://127\.0\.0\.1/.*,
  https?://localhost/.*,
  https://testvidp.buergerkarte.at/.*
</Whitelist>
```

Figure 9 shows the example configuration of whitelist section. The entries might be based on regular expressions.

Option **SSL/disableAllChecks** is used to deactivate all SSL certificate checks of calling instance. In production systems should be set to **false**.

### 3.7.2 Configuring SSL certificates

The relevant directories here are **certStore/toBeAdded** and **trustStore**, located under **/etc/tomcat7/webapps/bkuonline/WEB-INF/classes/at/gv/egiz/bku/certs**.

Directory **`trustStore`** contains the trusted certificates of Certification Authorities. The certificates of additional CAs should be copied to this location.

In directory **`certStore/toBeAdded`** copied are all the certificates used in the process of certificate chain building and verification, including the SSL certificate of BKUOnline and MOA-ID host system. Therefore, if the server SSL certificate does not contain complete chain, the certificates from that chain should be copied to this directory separately. After the restart, the application will check this directory, read and move its contents.

Should some certificates be left in **`toBeAdded`** after the application's or server restart, the server administrator should check the logs for the errors. One of the reasons might be incorrect certificate format. In this case, the file should be converted and again copied to **`toBeAdded`** directory.

### 3.7.3 Logging configuration

The file **`/etc/tomcat7/webapps/bkuonline/WEB-INF/classes/log4j.properties`** contains logging configuration for BKUOnline module. Relevant for the configuration are the sections **`STDOUT appender`** and **`FILE appender`**, as well as **`log4j.rootLogger`** setting. The logging can be customized by enabling higher logging level (e.g. **`DEBUG`** instead of **`INFO`**) and by adjusting file paths to fit the local path and configuration needs.

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# 4 Deployment of V-IDP package

In this section the system requirements and contents of deployment archive are described. They are followed with the list of necessary steps in the deployment process. When necessary, the list contains also additional brief explanations.

For the reference to specific configuration please follow the descriptions from Section 3: Configuration of V-IDP and its components.

## 4.1 System requirements

Please ensure that you have **`Tomcat 6`** or **`7`** installed on the system, as well as updated **`JDE 1.6`** or **`1.7`**.

## 4.2 Package contents

The deployment package of MOA-ID contains the following directories, as described in Table 22: Contents of deployment archive.

| Path | Description |
|---|---|
| `conf` | Configuration directories of MOA-ID and its components |
| `doc` | Documentation, including this manual |
| `endorsed` | Additional libraries |
| `ext` | Additional external libraries |
| `tomcat` | Files to be deployed on Apache Tomcat server |

***Table 22: Contents of deployment archive***

The layout of **`conf`** directory is as describe in Table 23: Contents of configuration directory in deployment archive.

| Path | Description |
|---|---|
| `moa-id` | Configuration of MOA-ID |
| `moa-id-configuration` | Configuration of MOA-ID web interface |
| `moa-spss` | Configuration of MOA-SPSS module |

***Table 23: Contents of configuration directory in deployment archive***

## 4.3 Copy and set up MOA-ID configuration files

The contents of `conf` directory, described in Table 22: Contents of deployment archive and Table 23: Contents of configuration directory in deployment archive should be copied to appropriate location, e.g. Tomcat configuration directory. Furthermore the contained files should be adjusted to reflect local configuration.

The example configuration is described in Section 2.4: MOA-ID configuration files, Section 3.1: Preparing basic MOA configuration as well as in Section 3.2: Preparing MOA configuration interface.

## 4.4 Create and populate MOA-ID Keystore

The Java keystore (JKS) should be created and populated with trusted certificates of other interacting peers (PEPS, SP etc). It should contain the private key used to sign outgoing messages.

The example configurations of this step are given in Section 2.4: MOA-ID configuration files and Seciton 3.3: Configuring specific Stork support for MOA.

## 4.5 Configure environment variables

As demonstrated in Section 2.3: Setting up and running Apache Tomcat instance, the configuration of Tomcat instance should be set up to contain reflect local configuration generated in previous steps.

## 4.6 Copy endorsed files to Tomcat's endorsed directory

The files contained in directory **`endorsed`** should be copied to the Tomcat's **`endorsed`** directory. These are libraries used by MOA-ID and its components.

## 4.7 Install JCE Policy files

In order to be able to support cryptographic configuration and options of IAIK libraries, it is necessary to update Java Cryptography Extension policy files.

## 4.8 Copy ext files to ext directory of Java distribution

The files from **`ext`** directory should be copied to **`jre/lib/ext`** directory of Java distribution. These are the IAIK libraries used for cryptographic functions.

## 4.9 Deploy included WAR files

The following three war files contained in the archive should be deployed:

- `bkuonline.war`
- `moa-id-auth.war`
- `moa-id-configuration.war`

Please adjust the naming schema of these files to reflect your local preferences. As reference you might use Table 3: Paths and URLs of deployed applications.

## 4.10 Configure BKUOnline and disable support for Austrian Test Cards

Based on the example given in Section 3.7: Configuring BKUOnline you can configure BKUOnline. Production systems must have SSL check enabled.

## 4.11 Install production SSL certificate

The production SSL certificate should be installed and enabled in Apache httpd and Apache Tomcat daemons.

## 4.12 Setup general settings of MOA-ID

As demonstrated in Section 3.1: Preparing basic MOA configuration, it is necessary to setup basic configuration of MOA-ID.

## 4.13 Initialize and setup MOA-ID web configuration interface

As demonstrated in Section 3.2: Preparing MOA configuration interface, it is necessary to configure and enable web access for MOA-ID configuration interface.

## 4.14 Setup MOA-ID and service provider application via web interface

As demonstrated in Section 3.4: General MOA configuration and Section 3.5: Setting up particular service provider, it is necessary to get through general MOA-ID setup, create web interface users and create service provider application.

After the configuration is done, you might want to disable web interface login possibility in configuration file **`moa-id-configtool.properties`** under **`moa-id-configuration`** directory.

## 4.15 Security

Last, but not least, you should check you internal organizational security guidelines and requirements, the recommendations of operating system and software platform used and harden your system.

# 5 References

[1] http://en.wikipedia.org/wiki/Executive_summary

[2] References are marked using a numbered list style referred to as References. This style has the following specifications: Calibri, 11pt., single line spacing, 6 pt. space from the previous paragraph.

[3] References within the text are in the form:

[4] [Az07] for a source with one author: A (capital) stands for the first letter of the author's family name, z for the second letter of the family name, 07 stands for the year 2007 of publication,

[5] [Az07a], [Az07b], if a number of works by the same author exist from the same year,

[6] [XY00] or [XYZ01] for a source with two or three authors: X, Y and Z stand for the first letters (in capitals) of the authors in the sequence in which they are listed in the source.

[7] in the case of more than three authors, only the first author mentioned in the source is listed, by analogy with (1), e.g. [Az07].