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2 **eXtensible Access Control Markup Language**
3 **(XACML) Version 3.0 Policy Distribution**
4 **Protocol Use-cases and Requirements**

5 **Working draft 01, 8 Oct 2004**

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26 Abstract:

27 This document defines the use-cases and requirements for the policy distribution protocol
28 for version 3.0 of the extensible access-control markup language.

29 Status:

30 This version of the specification is a working draft of the committee. As such, it is expected
31 to change prior to adoption as an OASIS standard.

32 If you are on the xacml@lists.oasis-open.org list for committee members, send comments
33 there. If you are not on that list, you may use the following link and complete the comment
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50 1. Glossary (non-normative)

51 **PRP** – Policy retrieval point. The component from which **applicable policies** may be retrieved.

52 **Topic** – The set of **decision requests** that a **PDP** is intended to answer.

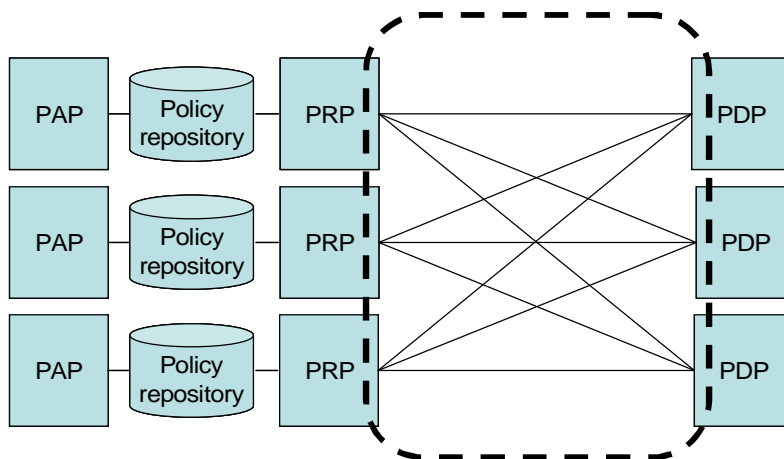
53 Other terms have the meaning defined in the glossary of [XACML].

54 2. Introduction (normative)

55 A common deployment of XACML components involves one or more **PAPs** and one or more **PDPs**.
 56 The **policies** applicable to any one of the **PDPs** may include a subset of the **policies** administered
 57 by each **PAP**. In response to a **decision request**, a **PDP** commonly executes all the **policies** it
 58 contains. Therefore, it is more efficient for a **PDP** to load only **policies** that may be applicable to
 59 the requests that it may be called upon to answer.

60 It is assumed that the **PAP** stores its **policies** in a repository and that a **PRP** offers a simple
 61 interface into the repository by which the **PDP** can locate and retrieve the **applicable policies**.

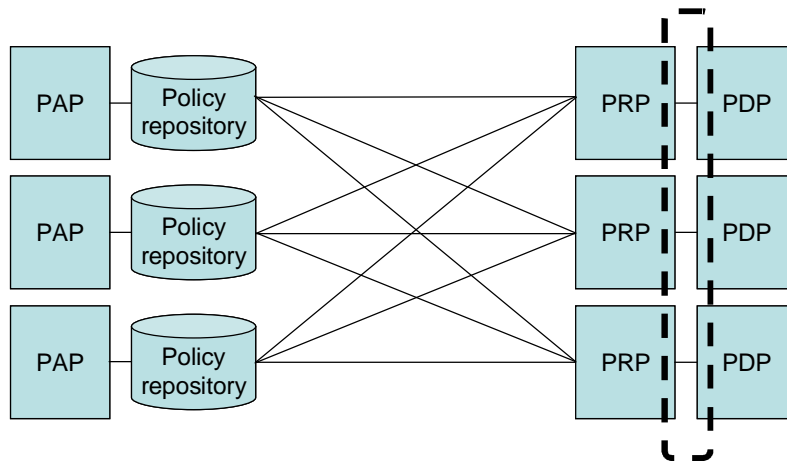
62 As shown by the dashed rectangles in Figure 1 and Figure 2, this requirements document deals
 63 with the exchange between the **PRP** and the **PDP**. Any exchanges between the repository and the
 64 **PRP** are out of scope.



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Figure 1 - Context 1



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Figure 2 - Context 2

69 It is assumed that there is a many-to-many relationship between the **PAP** and the **PDP**. It is further
 70 assumed that the **PAP** stores its **policies** in a repository. The **PRP** retrieves policies from the
 71 repository. The **PDP** interacts with the **PRP** to obtain the **policies** it needs.

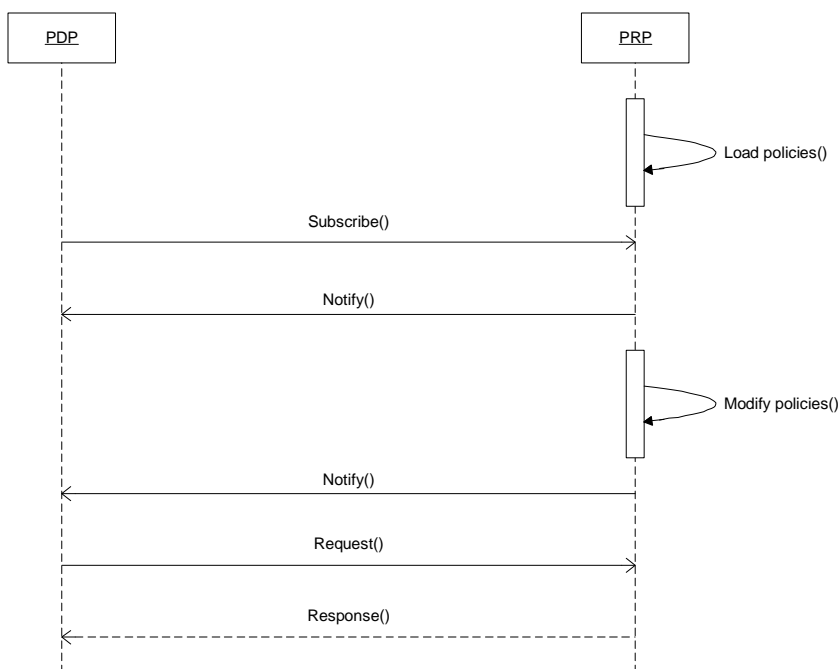
72 Figure 1 shows a one-to-one relationship between the repository and the **PRP** and a many-to-many
 73 relationship between the **PRP** and the **PDP**.

74 Figure 2 shows a many-to-many relationship between the repository and the **PRP** and a one-to-one
 75 relationship between the **PRP** and the **PDP**. Regardless, the required protocol operates between
 76 the **PRP** and the **PDP**. The protocol in operation between the repository and the **PRP** is out of
 77 scope.

78

79 **3. Sequence**

80 The protocol proceeds as shown in Figure 3.



81

82

Figure 3 - Sequence diagram

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1. (Optionally) the **PDP** subscribes to the **PRP**, indicating that it wishes to be notified of the introduction, replacement or withdrawal of **applicable policies**.

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2. (Optionally) the **PRP** notifies the **PDP** of the identities of **applicable policies** that it currently possesses.

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87

3. (Optionally) the **PRP** notifies the **PDP** of the identities of **applicable policies** that have been introduced, replaced or withdrawn.

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89

4. The **PDP** requests **policies** (by identity).

90

5. The **PRP** returns the requested **policies**.

91

4. Requirements

92

At the time of deployment of the PDP it is configured with a **topic**. The **PDP's** topic defines the set of **decision requests** that it is intended to answer. The **topic** conforms with the syntax of the `<xacml:Target>` element.

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5. Potential sources

96

[SAMLProf] describes a request/response protocol for retrieving **policies** by identifier or **topic**.

97

[WS-Notification] describes a subscription/notification protocol.

98 **6. Transport layer**

99 It is expected that the protocol will be defined as a profile of an existing application protocol (such
100 as SAML), in which case it will inherit the transport-layer bindings of the host protocol.

101 **7. References**

102 **SAML** – OASIS Assertions and Protocols for the OASIS Security Assertion Markup Language
103 (SAML) V2.0, Committee Draft 02, 24 September 2004. Available at: [http://www.oasis-
open.org/committees/download.php/9455/sstc-saml-core-2.0-cd-02.pdf](http://www.oasis-
104 open.org/committees/download.php/9455/sstc-saml-core-2.0-cd-02.pdf)

105 **SAMLProf** – OASIS SAML 2.0 profile of XACML, Committee Draft 01, 16 September 2004.
106 Available at: [http://docs.oasis-open.org/xacml/access_control-xacml-2.0-saml_profile-spec-cd-
01.pdf](http://docs.oasis-open.org/xacml/access_control-xacml-2.0-saml_profile-spec-cd-
107 01.pdf)

108 **WS-Notification** – OASIS Web Services Base Notification 1.2 (WS-BaseNotification), Working
109 draft 03, 21 June 2004. Available at: [http://docs.oasis-open.org/wsn/2004/06/wsn-WS-
BaseNotification-1.2-draft-03.pdf](http://docs.oasis-open.org/wsn/2004/06/wsn-WS-
110 BaseNotification-1.2-draft-03.pdf)

111 **XACML** – OASIS eXtensible Access Control Markup Language (XACML) Version 2.0, Committee
112 Draft 02, 30 September 2004. Available at: [http://docs.oasis-open.org/xacml/access_control-xacml-
2_0-core-spec-cd-02.pdf](http://docs.oasis-open.org/xacml/access_control-xacml-
113 2_0-core-spec-cd-02.pdf)

114 **Appendix A. Acknowledgments**

115 The following individuals contributed to the development of the specification:

116

117 **Appendix B. Revision history**

Rev	Date	By whom	What
WD 01	8 Oct 2004	Tim Moses	First working draft

118

119 Appendix C. Notices

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