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Management Initiative Registration Profile

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Foreword

This document was prepared by the DMTF Architecture Working Group

23 DMTF is a not-for-profit association of industry members dedicated to promoting enterprise and systems management and interoperability. For information about the DMTF, see http://www.dmtf.org.

Introduction

33 This document defines the CIM model for advertising and discovering conformance of an implementation to one or more management initiatives. The information in this document is intended to be sufficient for a provider or consumer of this data to identify unambiguously the classes, properties, methods, and values that need to be instantiated and manipulated.

34 The target audience for this specification is implementers who are writing CIM-based providers or consumers of management interfaces that represent the components described in this document.

35 ## Document conventions

36 ### Typographical conventions

37 The following typographical conventions are used in this document:

38 - Document titles are marked in *italics*.

39 - Important terms that are used for the first time are marked in *italics*.

40 - Terms include a link to the term definition in the "Terms and definitions" clause, enabling easy navigation to the term definition.

41 ### OCL usage conventions

42 Constraints in this document are specified using OCL (see OCL 2.0).

43 OCL statements are in `monospaced font`.

44

Management Initiative Registration Profile

45

1 Scope

46   The Management Initiative Registration profile is an autonomous profile that provides for advertising and discovering conformance of an implementation to management initiatives, and optionally to the management profiles of the advertised initiatives.

47

2 Normative references

48   The following referenced documents are indispensable for the application of this document. For dated or versioned references, only the edition cited (including any corrigenda or DMTF update versions) applies. For references without a date or version, the latest published edition of the referenced document (including any corrigenda or DMTF update versions) applies.

49   DMTF DSP0004, *CIM Infrastructure Specification 2.7*,
http://www.dmtf.org/standards/published_documents/DSP0004_2.7.pdf

50   DMTF DSP0223, *Generic Operations 1.0*,
http://www.dmtf.org/standards/published_documents/DSP0223_1.0.pdf

51   DMTF DSP1001, *Management Profile Specification Usage Guide 1.1*,
http://www.dmtf.org/standards/published_documents/DSP1001_1.1.pdf

52   DMTF DSP1033, *Profile Registration Profile 1.1*,
http://www.dmtf.org/standards/published_documents/DSP1033_1.1.pdf

53   OMG formal/06-05-01, *Object Constraint Language 2.0*,
http://www.omg.org/spec/OCL/2.0/

54   ISO/IEC Directives, Part 2, *Rules for the structure and drafting of International Standards*,
http://isotc.iso.org/livelink/livelink?func=ll&objId=4230456&objAction=browse&sort=subtype

55

3 Terms and definitions

56   In this document, some terms have a specific meaning beyond the normal English meaning. Those terms are defined in this clause.

57

3.1 General

58   The terms "shall" ("required"), "shall not", "should" ("recommended"), "should not" ("not recommended"), "may", "need not" ("not required"), "can" and "cannot" in this document are to be interpreted as described in ISO/IEC Directives, Part2, Annex H. The terms in parenthesis are alternatives for the preceding term, for use in exceptional cases when the preceding term cannot be used for linguistic reasons. Note that ISO/IEC Directives, Part2, Annex H specifies additional alternatives. Occurrences of such additional alternatives shall be interpreted in their normal English meaning in this document.

59   The terms "clause", "subclause", "paragraph", "annex" in this document are to be interpreted as described in ISO/IEC Directives, Part2, Clause 5.

60

The terms "normative" and "informative" in this document are to be interpreted as described in ISO/IEC Directives, Part2, Clause 3. In this document, clauses, subclauses or annexes indicated with "(informative)" as well as notes and examples do not contain normative content.

The terms defined in DSP0004, DSP0223, and DSP1001 apply to this document.

61   The following additional terms are defined in this document.

62   **3.2**

63   **initiative, management initiative**

64   A named and versioned amount of management functionality with conformance requirements. The conformance requirements for implementing a management initiative are described in an initiative specification, based on management profiles and other specifications. Initiatives may be defined by DMTF, other standards organizations, or vendors.

65   **3.3**

66   **initiative specification**

67   A specification defining conformance requirements for implementing an initiative. Also called "initiative wrapper specification".

68   **3.4**

69   **implementation namespace**
       A CIM namespace for the main part of the implementation, as defined in DSP1033.

70   **3.5**

71   **interop namespace**
       A CIM namespace for interoperability, as defined in DSP1033.

72   **3.6**

73   **profile**
       A management profile, as defined in DSP1001.

74

4   Symbols and abbreviated terms

75   The abbreviations defined in DSP0004, DSP0223, and DSP1001 apply to this document.

76   This document does not define any additional abbreviations.

77

5   Synopsis

78   **Profile name:** Management Initiative Registration

79   **Version:** 1.0.0

80   **Organization:** DMTF

81   **Abstract:** No

82   **Profile type:** Autonomous

83   **Schema:** DMTF CIM 2.37

84   **Central class adaptation:**   RegisteredInitiative

85   **Scoping class adaptation:**   RegisteredInitiative

86 The Management Initiative Registration profile is an autonomous profile that provides for advertising and discovering conformance of an implementation to management initiatives, and optionally to the management profiles of the advertised initiatives.

87 Table 1 identifies the profile references defined in this profile.

88 **Table 1 – Profile references**

Profile reference name	Profile name	Organi-zation	Version	Relation-ship	Description
PRP	Profile Registration	DMTF	1.1	Mandatory	Used to advertise conformance of the implementation to this profile.
InitiativePRP	Profile Registration	DMTF	1.1	Mandatory	Used to advertise conformance of the implementation to the management profiles of advertised management initiatives.

89 Table 2 identifies the features defined in this profile.

90 **Table 2 – Features**

Feature	Requirement	Description
InitiativeProfiles	Optional	See 7.1.1.

91 Table 3 identifies the class adaptations defined in this profile.

92 **Table 3 – Adaptations**

Adaptation	Elements	Requirement	Description
Instantiated, embedded and abstract adaptations			
RegisteredProfile	CIM_RegisteredProfile	Mandatory	See 7.2.2.
RegisteredInitiative	CIM_RegisteredSpecification	Mandatory	See 7.2.3.
InitiativeProfile	CIM_RegisteredProfile	Conditional	See 7.2.4.
ReferencedInitiativeProfile	CIM_ReferencedSpecification	Conditional	See 7.2.5.
Indications and exceptions			
This profile does not define any such adaptations.			

93 Table 4 identifies the use cases and state descriptions defined in this profile.

94 **Table 4 – Use cases and state descriptions**

Name	Description
State description: SimpleObjectDiagram	See 8.1.
Use case: DetermineAllInitiatives	See 8.2.
Use case: DetermineInitiativesOfProfile	See 8.3.
Use case: DetermineProfilesOfInitiative	See 8.4.

95

6   Description

96   The DMTF class adaptation diagram in Figure 1 shows all class usages (adaptations) defined in this profile, and relevant class adaptations from referenced profiles. Adaptation names are shown in parenthesis if they differ from the class names without schema prefix.

97
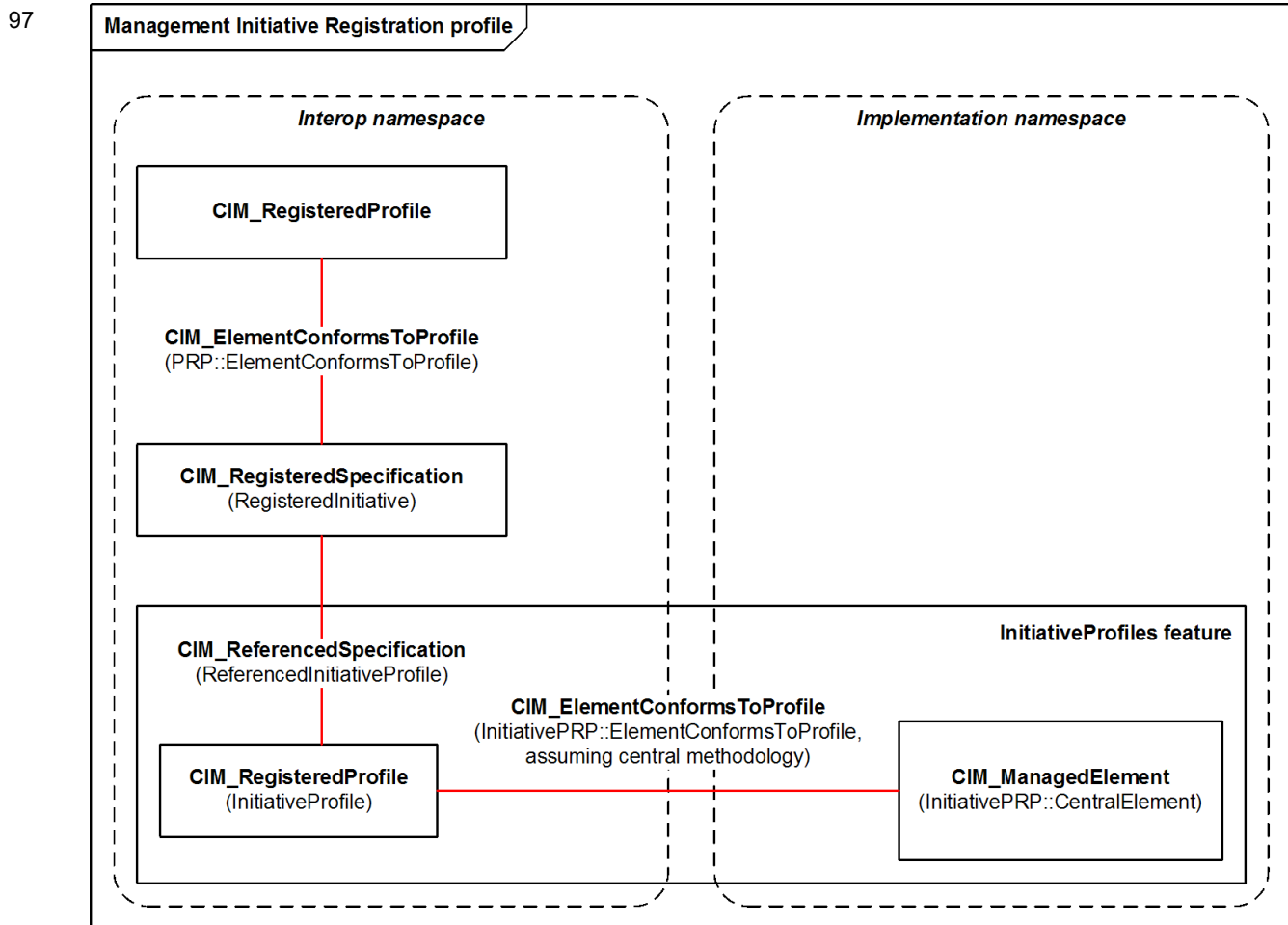
98   **Figure 1 – DMTF class adaptation diagram**

99

The RegisteredInitiative class adaptation is the central (and scoping) element of this profile; its instances represent management initiatives to which implementations conform.

100   If the InitiativeProfiles feature is implemented for an initiative, the profiles implemented in context of that initiative are represented by InitiativeProfile instances associated through ReferencedInitiativeProfile. The InitiativeProfile instances are implemented as part of the profile they represent.

101   Conformance to this profile is advertised using the Profile Registration profile (referenced as PRP); that is, via the RegisteredProfile instance.

102

7 Implementation

7.1 Features

103

7.1.1 Feature: InitiativeProfiles

104

Implementing this feature for an advertised management initiative provides support for representing the management profiles of that initiative.

105 The requirement level for this feature is optional.

106 This feature can be made available to clients at the granularity of RegisteredInitiative instances.

107 It can be concluded that the feature is available for a RegisteredInitiative instance if:

109 • The following OCL derivation constraint evaluates to a Boolean value of True.

110 OCL context: A RegisteredInitiative instance.

111
```
derive: self.ReferencedInitiativeProfile::Antecedent->size() > 0
```

112 Explanation:

There is at least one ReferencedInitiativeProfile instance referencing the RegisteredInitiative instance representing the advertised management initiative.

113 Otherwise, it can be concluded that the feature is not available.

7.2 Adaptations

114

7.2.1 Conventions

115

116 This profile defines operation requirements based on DSP0223.

117 For adaptations of ordinary classes and of associations, the requirements for operations are defined in adaptation-specific subclauses of subclause 7.2.

118 For association traversal operation requirements that are specified only in the elements table of an adaptation (i.e., without operation-specific subclauses), the names of the association adaptations to be traversed are listed in the elements table.

119 The default initialization requirement level for property requirements is optional.

120 The default modification requirement level for property requirements is optional.

121 This profile repeats the effective values of certain Boolean qualifiers as part of property, method parameter, or method return value requirements. The following convention is established: If the name of a qualifier is listed, its effective value is True; if the qualifier name is not listed, its effective value is False. The convention is applied in the following cases:

122 • In: indicates that the parameter is an input parameter

123 • Out: indicates that the parameter is an output parameter

124 • Key: indicates that the property is a key (that is, its value is part of the instance path)

125 • Required: indicates that the element value shall be non-Null

126

- Null OK: indicates explicitly that the element value may be Null for mandatory, conditional or conditional exclusive properties. This information is not specified as a qualifier in the schema but as an indicator in the profile.

127 ### 7.2.2 Adaptation: RegisteredProfile: CIM_RegisteredProfile

128 #### 7.2.2.1 General

129 This adaptation models the advertisement of conformance to this profile.

130 Profiles derived from this profile that have a need to advertise conformance to the derived profile, should define an adaptation derived from PRP::RegisteredProfile for this purpose.

131 The implementation type of this adaptation is instantiated ordinary adaptation.

132 The requirement level for this adaptation is mandatory.

133 Table 5 identifies the element requirements for this adaptation.

134 **Table 5 – RegisteredProfile: Element requirements**

Element	Requirement	Description
Base adaptations		
PRP::RegisteredProfile	Mandatory	See PRP::RegisteredProfile.
Properties		
RegisteredName	Mandatory	Required, see 7.2.2.2.
RegisteredOrganization	Mandatory	Required, see 7.2.2.3.
RegisteredVersion	Mandatory	Required, see 7.2.2.4.

135 #### 7.2.2.2 Property: RegisteredName

136 The presentation requirement level for this property is mandatory.

137 The implementation shall satisfy the following constraint for this property:

138 OCL constraint with context of a RegisteredProfile instance:

139
```
inv: self.RegisteredName = 'Management Initiative Registration'
```

140 #### 7.2.2.3 Property: RegisteredOrganization

141 The presentation requirement level for this property is mandatory.

142 The implementation shall satisfy the following constraint for this property:

143 OCL constraint with context of a RegisteredProfile instance:

144
```
inv: self.RegisteredOrganization = 2 /* DMTF */
```

145 #### 7.2.2.4 Property: RegisteredVersion

146 The presentation requirement level for this property is mandatory.

147 The implementation shall satisfy the following constraint for this property:

148 OCL constraint with context of a RegisteredProfile instance:

149

```
inv: self.RegisteredVersion = '1.0.0'
```

150 ### 7.2.3 Adaptation: RegisteredInitiative: CIM_RegisteredSpecification

151 #### 7.2.3.1 General

152 This adaptation models management initiatives to which this implementation conforms; each such initiative shall have an initiative specification describing it.

153 This adaptation shall be exposed in the interop namespace of the WBEM server that implements the initiative.

154 The implementation type of this adaptation is instantiated ordinary adaptation.

155 The requirement level for this adaptation is mandatory.

156 Table 6 identifies the element requirements for this adaptation.

157 **Table 6 – RegisteredInitiative: Element requirements**

Element	Requirement	Description
Properties		
InstanceID	Mandatory	Key, see schema definition.
SpecificationType	Mandatory	See 7.2.3.2.
RegisteredOrganization	Mandatory	Required, see 7.2.3.3.
RegisteredName	Mandatory	Required, see 7.2.3.4.
RegisteredVersion	Mandatory	Required, see 7.2.3.5.
AdvertiseTypes	Mandatory	Required, see schema definition.
AdvertiseTypeDescriptions	Mandatory	See schema definition.
Operations		
GetInstance( )	Mandatory	See DSP0223.
EnumerateInstances( )	Mandatory	See DSP0223.
EnumerateInstanceNames( )	Mandatory	See DSP0223.
Associators( ) for ReferencedInitiativeProfile	Conditional	See 7.2.3.6.
AssociatorNames( ) for ReferencedInitiativeProfile	Conditional	See 7.2.3.7.

158 #### 7.2.3.2 Property: SpecificationType

159 The presentation requirement level for this property is mandatory.

160 The implementation shall satisfy the following constraint for this property:

161 OCL constraint with context of a RegisteredInitiative instance:

162
```
inv: self.SpecificationType = 3 /* Initiative Wrapper */
```

163 Explanation:

This property shall have a value of 3 (Initiative Wrapper), indicating that the instance represents an initiative specification.

164

7.2.3.3 Property: RegisteredOrganization

165   The presentation requirement level for this property is mandatory.

166   The value of this property shall be the organization owning the initiative specification of the initiative represented by an instance of this adaptation.

167

7.2.3.4 Property: RegisteredName

168   The presentation requirement level for this property is mandatory.

169   The value of this property shall be the name of the initiative as defined in the initiative specification of the initiative represented by an instance of this adaptation.

170

7.2.3.5 Property: RegisteredVersion

171   The presentation requirement level for this property is mandatory.

172   The value of this property shall be the version of the initiative specification of the initiative represented by an instance of this adaptation.

173

7.2.3.6 Operation: Associators( ) for ReferencedInitiativeProfile

174   For general requirements on the implementation of this operation, see DSP0223.

175   The requirement level for this operation is conditional, with the following condition:

    The InitiativeProfiles feature is implemented.

176   This operation requirement applies when traversing the following association adaptations:

177   • ReferencedInitiativeProfile

178

7.2.3.7 Operation: AssociatorNames( ) for ReferencedInitiativeProfile

179   For general requirements on the implementation of this operation, see DSP0223.

180   The requirement level for this operation is conditional, with the following condition:

    The InitiativeProfiles feature is implemented.

181   This operation requirement applies when traversing the following association adaptations:

182   • ReferencedInitiativeProfile

183

7.2.4 Adaptation: InitiativeProfile: CIM_RegisteredProfile

184

7.2.4.1 General

This adaptation models profiles to which an implementation conforms and that are referenced in the initiative specification of a management initiative.

185   The implementation type of this adaptation is instantiated ordinary adaptation.

186   The requirement level for this adaptation is conditional, with the following condition:

    The InitiativeProfiles feature is implemented.

187   Table 7 identifies the element requirements for this adaptation.

188

Table 7 – InitiativeProfile: Element requirements

Element	Requirement	Description
Base adaptations		
InitiativePRP::RegisteredProfile	Mandatory	See InitiativePRP::RegisteredProfile.
Operations		
Associators( ) for ReferencedInitiativeProfile	Conditional	See 7.2.4.2.
AssociatorNames( ) for ReferencedInitiativeProfile	Conditional	See 7.2.4.3.

189 **7.2.4.2 Operation: Associators( ) for ReferencedInitiativeProfile**

190 For general requirements on the implementation of this operation, see DSP0223.

191 The requirement level for this operation is conditional, with the following condition:

The InitiativeProfiles feature is implemented.

192 This operation requirement applies when traversing the following association adaptations:

193 • ReferencedInitiativeProfile

194 **7.2.4.3 Operation: AssociatorNames( ) for ReferencedInitiativeProfile**

195 For general requirements on the implementation of this operation, see DSP0223.

196 The requirement level for this operation is conditional, with the following condition:

The InitiativeProfiles feature is implemented.

197 This operation requirement applies when traversing the following association adaptations:

198 • ReferencedInitiativeProfile

199 **7.2.5 Adaptation: ReferencedInitiativeProfile: CIM_ReferencedSpecification**

200 **7.2.5.1 General**

This adaptation models the relationship between management initiatives represented by RegisteredInitiative instances and the management profiles implemented in context of these initiatives that are represented by InitiativeProfile instances.

201 This adaptation shall be exposed in the interop namespace of the WBEM server that implements the initiative.

202 The implementation type of this adaptation is instantiated association adaptation.

203 The requirement level for this adaptation is conditional, with the following condition:

The InitiativeProfiles feature is implemented.

204 Table 8 identifies the element requirements for this adaptation.

205 **Table 8 – ReferencedInitiativeProfile: Element requirements**

Element	Requirement	Description
Properties		
Antecedent	Mandatory	Key, see 7.2.5.2.
Dependent	Mandatory	Key, see 7.2.5.3.

206

7.2.5.2 Property: Antecedent

207   The presentation requirement level for this property is mandatory.

208   The implementation shall satisfy the following constraints for this reference property:

209   • Referenced instances shall be of class adaptation InitiativeProfile.

210   • The multiplicity of [0 .. *] defined in the schema is not further constrained.

211
7.2.5.3 Property: Dependent

212   The presentation requirement level for this property is mandatory.

213   The implementation shall satisfy the following constraints for this reference property:

214   • Referenced instances shall be of class adaptation RegisteredInitiative.

215   • The multiplicity of [0 .. *] defined in the schema is not further constrained.

216

8   Use cases and state descriptions

217
8.1   State description: SimpleObjectDiagram

218   The object diagram in Figure 2 shows a conformant implementation of this profile, with one management
       initiative and two profiles advertised as conformant to the initiative, implementing the InitiativeProfiles
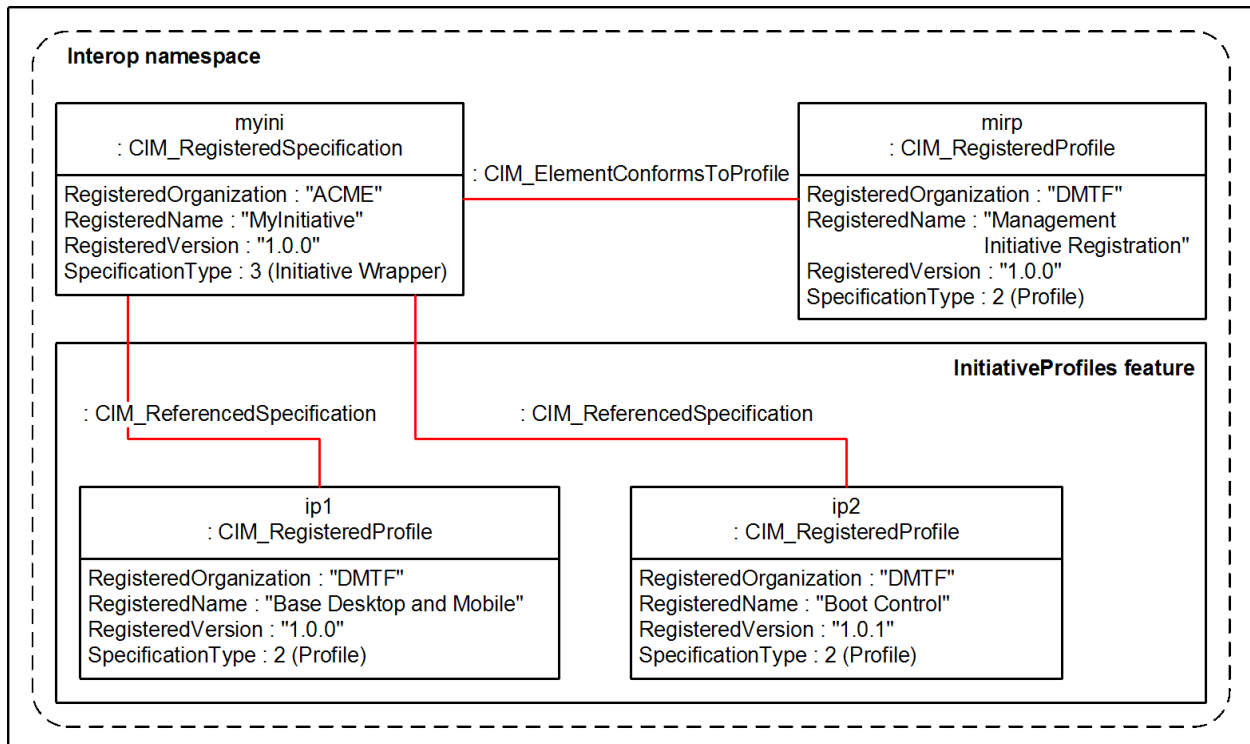   feature.

219

Figure 2 – Simple object diagram

221

The `myini` instance represents that the implementation conforms to the "MyInitiative" management
initiative, version 1.0.0.

The two profiles that have been implemented in context of that initiative are represented by the `ip1` and `ip2` instances. Because the InitiativeProfiles feature has been implemented, the `ip1` and `ip2` instances are associated with the `myini` instance via ReferencedInitiativeProfile association instances.

223   Conformance of the implementation to this profile is indicated by the `mirp` instance, using the mechanisms described in [DSP1033](). Because this profile is an autonomous profile, the central and scoping path methodologies fall together and a client can always expect a CIM_ElementConformsToProfile association to exist between the central instances of CIM_RegisteredSpecification and the `mirp` instance representing this profile.

224
8.2   Use case: DetermineAllInitiatives

Determine all management initiatives to which the implementation conforms, and their versions.

225   This use case has the following preconditions:

227   • The interop namespace of the WBEM server is known.

228   The main flow for this use case consists of the following step:

230   1. Enumerate CIM_RegisteredSpecification instances in the interop namespace of the WBEM server, restricting the result set to instances where SpecificationType = 3 (Initiative Wrapper).

231   The resulting instances conform to the RegisteredInitiative adaptation and represent all initiatives to which the implementation (on the WBEM server) conforms. The RegisteredName and RegisteredVersion properties of the returned CIM_RegisteredSpecification instances identify name and version of the management initiative.

232   Note that there may be initiatives implemented in the WBEM server for which this profile was not implemented. Such initiatives would not be represented in the result set of this use case.

233
8.3   Use case: DetermineInitiativesOfProfile

Determine to which management initiatives a given implemented profile belongs.

234   This use case has the following preconditions:

235   • The InitiativeProfiles feature is implemented for the initiatives in question.

236   • The CIM_RegisteredProfile instance representing the given implemented profile is known.

237   The main flow for this use case consists of the following step:

239   1. From the given CIM_RegisteredProfile instance, traverse the CIM_ReferencedSpecification association, restricting the associated instances to those of class CIM_RegisteredSpecification where SpecificationType = 3 (Initiative Wrapper).

240   The resulting CIM_RegisteredSpecification instances conform to the RegisteredInitiative adaptation and represent the initiatives to which the given profile belongs.

241   Note that there may be initiatives to which the given profile belongs but for which this profile or the InitiativeProfiles feature was not implemented. Such initiatives would not be represented in the result set of this use case.

242
8.4   Use case: DetermineProfilesOfInitiative

Determine to which profiles of a given implemented initiative the implementation conforms.

243   This use case has the following preconditions:

244   • The InitiativeProfiles feature is implemented for the given initiative.

245

       • The CIM_RegisteredSpecification instance representing the given initiative is known.

246   The main flow for this use case consists of the following step:

248   1. From the given CIM_RegisteredSpecification instance, traverse the CIM_ReferencedSpecification association, restricting the associated instances to those of class CIM_RegisteredProfile.

249   The resulting CIM_RegisteredProfile instances conform to the InitiativeProfile adaptation and represent the profiles that advertise conformance to the given initiative.

250   Note that there may be profiles that belong to the given initiative but for which the InitiativeProfiles feature was not implemented. Such profiles would not be part of the result set of this use case.

251

ANNEX A
(informative)

Change log

252

Table 9 – Change log

Version	Date	Description
1.0.0b	2013-04-04	Released as Work in Progress
1.0.0c	2013-08-08	Released as Work in Progress