

CRD provider CRD file access

Version 1.0.0

User's guide

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【Revision history】

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【Hardware】

Model	Version	Notes

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1. Introduction

From CRD file to user's guide of CRD provider that acquires, and sets data this book through interface of CAO

CRD(Controller Resource Definition) is a standard to describe a state of the robot and controller's various resources with XML. The data schema is called CRD schema, and the XML file described according to this CRD schema is called CRD file.

This book explains the function of this CRD provider and the mounted method.

2. Outline of provider

2.1. Outline

The CRD provider is a provider to access the XML file written according to the format defined by the CRD schema. The structure that the CRD provider accesses the CRD file is shown as follows.

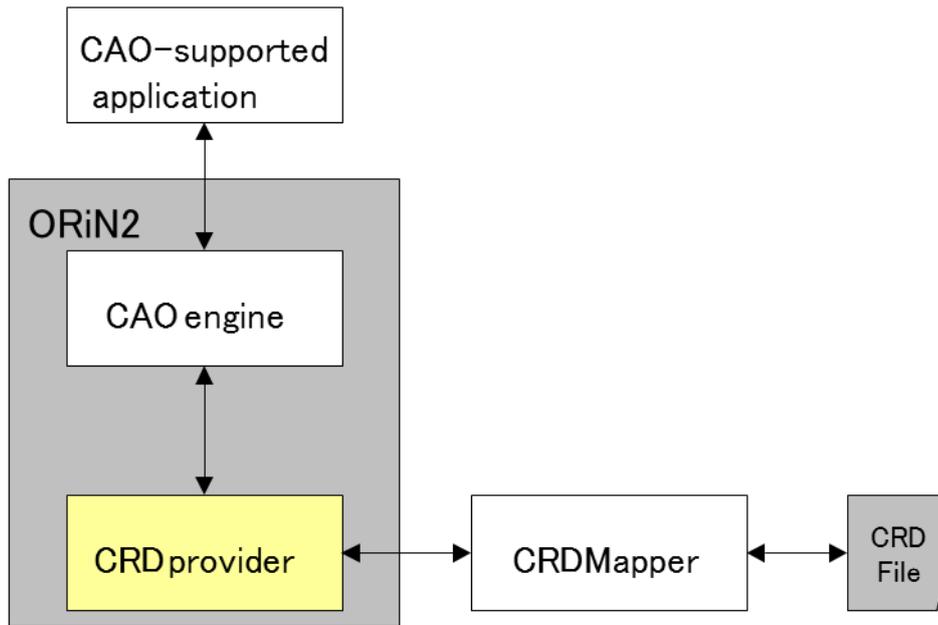


Figure1 Outline of access to CRD file

CRD Mapper is a COM component here that reads to the CRD file, and executes writing.

The file type of the CRD provider and CRD Mapper is DLL(Dynamic Link Library), and the details :. Table1 It is in.

Table1 CRD provider

File name	CaoProvCRD.dll
ProgID	CaoProv.CRD
Registry registration	regsvr32 CaoProvCRD.dll
Blotting out of registry registration	regsvr32 /u CaoProvCRD.dll

Table2 CRDMapper

File name	CRDMapper.dll
Registry registration	regsvr32 CRDMapper.dll
Blotting out of registry registration	regsvr32 /u CRDMapper.dll

2.2. Method property

2.2.1. CaoWorkspace::AddController method

The CaoController object connected with the Controller tag in the CRD file is acquired.

When this method is executed, the path of the CRD file is specified for the option character string. The list specified for the option character string is shown as follows.

Table3 Option character string of CaoWorkspace::AddController

Option	Meaning
Path=< path of CRD file >	The path of the CRD file is specified. Indispensable option

The name of the Controller tag in the CRD file is specified for controller-name. This method fails in the specification of the name that doesn't exist as Controller tag.

The example when the AddController method is executed is shown as follows.

```
AddController
(
  "RC1",           // Controller-name = RC1
  "CaoProv. CRD", // Fixation
  "",             // The GAP provider is executed in the process of the CAO engine.
  "Path=C:¥ORiN2¥CRD¥Text.xml" // Place of CRD file "C:¥ORiN2¥CRD¥Test.xml"
);
```

2.2.2. CaoController::AddCommand method

The CaoCommand object connected with the Command tag in the Controller tag is acquired.

The name of the Command tag in the Controller tag is specified for the command name. This method fails in the specification of the name that doesn't exist in the command name.

```
AddCommand
(
  "CMD1", // Command name = CMD1
  ""      // Option character string (unused)
);
```

2.2.3. CaoController::AddExtension method

The CaoExtension object connected with the Extension tag in the Controller tag is acquired.

The name of the Extension tag in the Controller tag is specified for the expansion board name. This method fails in the specification of the name that doesn't exist in the expansion board name.

```
AddExtension
(
  "EXT1",      // Command name = EXT1
  ""           // Option character string(unused)
);
```

2.2.4. CaoController::AddFile method

The CaoFile object connected with the File tag in the Controller tag is acquired.

The name of the File tag in the Controller tag is specified for the expansion board name. This method fails in the specification of the name that doesn't exist in the expansion board name.

```
AddFile
(
  "FILE1",    // Command name = FILE1
  ""          // Option character string(unused)
);
```

2.2.5. CaoController::AddRobot method

The CaoRobot object connected with the Robot tag in the Controller tag is acquired.

The name of the Robot tag in the Controller tag is specified for the robot name. This method fails in the specification of the name that doesn't exist in the robot name.

```
AddCommand
(
  "RB1",      // Command name = RB1
  ""          // Option character string(unused)
);
```

2.2.6. CaoController::AddTask method

The CaoTask object connected with the Task tag in the Controller tag is acquired.

The name of the Task tag in the Controller tag is specified for the task name. This method fails in the specification of the name that doesn't exist in the task name.

```
AddTask
(
  "TSK1",    // Command name = TSK1
  ""         // Option character string(unused)
);
```

2.2.7. CaoController::AddVariable method

The CaoVariable object connected with the Variable tag in the Controller tag is acquired.

The name of the Variable tag in the Controller tag is specified for variable identifier. This method fails in the specification of the name that doesn't exist in variable identifier.

```
AddVariable
(
    "VAR1",      // Command name = VAR1
    ""          // Option character string(unused)
);
```

2.2.8. CaoController::Execute Method

This method preserves a present state in the XML file in the superscription.

In this method, "Save" is specified for the command name of the first argument. The parameter of the second argument is not used.

```
Execute
(
    "Save",      // Fixed command name
    "<Parameter>", // Unused
)
```

2.2.9. CaoController::get_CommandNames property

The list of the name of the Command tag in the Controller tag is acquired.

2.2.10. CaoController::get_AddExtensionNames property

The list of the name of the Extension tag in the Controller tag is acquired.

2.2.11. CaoController::get_AddRobotNames property

The list of the name of the Robot tag in the Controller tag is acquired.

2.2.12. CaoController::get_AddTaskNames property

The list of the name of the Task tag in the Controller tag is acquired.

2.2.13. CaoController::get_AddVariableNames property

The list of the name of the Variable tag in the Controller tag is acquired.

2.2.14. CaoController::get_Attribute property

The value of the Attribute tag in the Controller tag is acquired.

2.2.15. CaoController::get_Help property

The value of the Help tag in the Controller tag is acquired.

2.2.16. CaoController::get_ID property

The value of the ID tag in the Controller tag is acquired.

2.2.17. CaoController::put_ID property

The value is set to the ID tag in the Controller tag.

The ID tag is added in the Controller tag when there is no ID tag. This change is not reflected in a file actual until the method of 2.2.8 is executed.

2.2.18. CaoCommand::get_Attribute property

The value of the Attribute tag in the Command tag is acquired.

2.2.19. CaoCommand::get_Help property

The value of the Help tag in the Command tag is acquired.

2.2.20. CaoCommand::get_Parameter property

The value of the Parameter tag in the Command tag is acquired.

2.2.21. CaoCommand::put_Parameter property

The value is set to the Parameter tag in the Command tag.

The Parameter tag is added in the Command tag when there is no Parameter tag. This change is not reflected in a file actual until the method of 2.2.8 is executed.

2.2.22. CaoCommand::get_State property

The value of the State tag in the Command tag is acquired.

2.2.23. CaoCommand::get_Timeout property

The value of the Timeout tag in the Command tag is acquired.

2.2.24. CaoCommand::put_Timeout property

The value is set to the Timeout tag in the Command tag.

The Timeout tag is added in the Command tag when there is no Timeout tag. This change is not reflected in a file actual until the method of 2.2.8 is executed.

2.2.25. CaoCommand::get_ID property

The value of the ID tag in the Command tag is acquired.

2.2.26. CaoCommand::put_ID property

The value is set to the ID tag in the Command tag.

The ID tag is added in the Command tag when there is no ID tag. This change is not reflected in a file actual until the method of 2.2.8 is executed.

2.2.27. CaoExtension::AddVariable method

The CaoVariable object connected with the Variable tag in the Extension tag is acquired.

The name of the Variable tag in the Extension tag is specified for variable identifier. This method fails in the specification of the name that doesn't exist in variable identifier.

```
AddVariable
(
    "VAR1",    // Command name = VAR1
    ""        // Option character string(unused)
);
```

2.2.28. CaoExtension::get_AddVariableNames property

The list of the name of the Variable tag in the Extension tag is acquired.

2.2.29. CaoExtension::get_Attribute property

The value of the Attribute tag in the Extension tag is acquired.

2.2.30. CaoExtension::get_Help property

The value of the Help tag in the Extension tag is acquired.

2.2.31. CaoExtension::get_ID property

The value of the ID tag in the Extension tag is acquired.

2.2.32. CaoExtension::put_ID property

The value is set to the ID tag in the Extension tag.

The ID tag is added in the Extension tag when there is no ID tag. This change is not reflected in a file actual until the method of 2.2.8 is executed.

2.2.33. CaoFile::AddVariable method

The CaoVariable object connected with the Variable tag in the File tag is acquired.

The name of the Variable tag in the File tag is specified for variable identifier. This method fails in the specification of the name that doesn't exist in variable identifier.

```
AddVariable
(
```

```
        "VAR1",      // Command name = VAR1
        ""          // Option character string (unused)
    );
```

2.2.34. CaoFile::get_AddVariableNames property

The list of the name of the Variable tag in the File tag is acquired.

2.2.35. CaoFile::AddFile method

The CaoFile object connected with the File tag in the File tag is acquired.

The name of the File tag in the File tag is specified for variable identifier. This method fails in the specification of the name that doesn't exist in variable identifier.

```
    AddFile
    (
        "FILE1",      // Command name = FILE1
        ""          // Option character string (unused)
    );
```

2.2.36. CaoFile::get_AddFileNames property

The list of the name of the File tag in the File tag is acquired.

2.2.37. CaoFile::get_Attribute property

The value of the Attribute tag in the File tag is acquired.

2.2.38. CaoFile::get_Help property

The value of the Help tag in the File tag is acquired.

2.2.39. CaoFile::get_DateCreated property

The value of the DateCreated tag in the File tag is acquired.

2.2.40. CaoFile::get_DateLastAccessed property

The value of the DateLastAccessed tag in the File tag is acquired.

2.2.41. CaoFile::get_DateLastModified property

The value of the DateLastModified tag in the File tag is acquired.

2.2.42. CaoFile::get_Path property

The value of the Path tag in the File tag is acquired.

2.2.43. CaoFile::get_Size property

The value of the Size tag in the File tag is acquired.

2.2.44. CaoFile::get_Type property

The value of the Type tag in the File tag is acquired.

2.2.45. CaoFile::get_Value property

The value of the Value tag in the File tag is acquired.

2.2.46. CaoFile::put_Value property

The value is set to the Value tag in the File tag.

The Value tag is added in the File tag when there is no Value tag. This change is not reflected in a file actual until the method of 2.2.8 is executed.

2.2.47. CaoFile::get_ID property

The value of the ID tag in the File tag is acquired.

2.2.48. CaoFile::put_ID property

The value is set to the ID tag in the File tag.

The ID tag is added in the File tag when there is no ID tag. This change is not reflected in a file actual until the method of 2.2.8 is executed.

2.2.49. CaoRobot::AddVariable method

The CaoVariable object connected with the Variable tag in the Robot tag is acquired.

The name of the Variable tag in the Robot tag is specified for variable identifier. This method fails in the specification of the name that doesn't exist in variable identifier.

```
AddVariable
(
    "VAR1",    // Command name = VAR1
    ""        // Option character string(unused)
);
```

2.2.50. CaoRobot::get_AddVariableNames property

The list of the name of the Variable tag in the Robot tag is acquired.

2.2.51. CaoRobot::get_Attribute property

The value of the Attribute tag in the Robot tag is acquired.

2.2.52. CaoRobot::get_Help property

The value of the Help tag in the Robot tag is acquired.

2.2.53. CaoRobot::get_ID property

The value of the ID tag in the Robot tag is acquired.

2.2.54. CaoRobot::put_ID property

The value is set to the ID tag in the Robot tag.

The ID tag is added in the Robot tag when there is no ID tag. This change is not reflected in a file actual until the method of 2.2.8 is executed.

2.2.55. CaoTask::AddVariable method

The CaoVariable object connected with the Variable tag in the Task tag is acquired.

The name of the Variable tag in the Task tag is specified for variable identifier. This method fails in the specification of the name that doesn't exist in variable identifier.

```
AddVariable  
(  
    "VAR1",    // Command name = VAR1  
    ""        // Option character string (unused)  
);
```

2.2.56. CaoTask::get_AddVariableNames property

The list of the name of the Variable tag in the Task tag is acquired.

2.2.57. CaoTask::get_Attribute property

The value of the Attribute tag in the Task tag is acquired.

2.2.58. CaoTask::get_Help property

The value of the Help tag in the Task tag is acquired.

2.2.59. CaoTask::get_FileName property

The value of the FileName tag in the Task tag is acquired.

2.2.60. CaoTask::get_ID property

The value of the ID tag in the Task tag is acquired.

2.2.61. CaoTask::put_ID property

The value is set to the ID tag in the Task tag.

The ID tag is added in the Task tag when there is no ID tag. This change is not reflected in a file actual until the method of 2.2.8 is executed.

2.2.62. CaoVariable::get_Attribute property

The value of the Attribute tag in the Variable tag is acquired.

2.2.63. CaoVariable::get_Help property

The value of the Help tag in the Variable tag is acquired.

2.2.64. CaoVariable::get_DateTime property

The value of the DateTime tag in the Variable tag is acquired.

2.2.65. CaoVariable::get_Value property

The value of the Value tag in the Variable tag is acquired.

2.2.66. CaoVariable::put_Value property

The value is set to the Value tag in the Variable tag.

The Value tag is added in the Variable tag when there is no Value tag. This change is not reflected in a file actual until the method of 2.2.8 is executed.

2.2.67. CaoVariable::get_ID property

The value of the ID tag in the Variable tag is acquired.

2.2.68. CaoVariable::put_ID property

The value is set to the ID tag in the Variable tag.

The ID tag is added in the Variable tag when there is no ID tag. This change is not reflected in a file actual until the method of 2.2.8 is executed.

2.3. Variable list

There is no variable peculiar to the CRD provider.

2.4. Error code

In the CAP provider, there is no peculiar error code. Please refer to the chapter of the error code of "[ORiN2 Programming guide](#)" for the ORiN2 commonness error.

3. Sample program

Sample Sample.frm that sets, and acquires the value to XML file “C:\¥Sample.XML” and the variable is shown as follows.

List 3-1**Sample.xml**

```
<?xml version="1.0" encoding="Shift_JIS"?>
<!--
    ***** [ORiN2] CRD File *****
-->
<CRD xmlns="http://www.orin.jp/CRD/CRDSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.orin.jp/CRD/CRDSchema CRDSchema.xsd">
  <Help/>
  <Version/>
  <Controller name="RC1">
    <Attribute>111</Attribute>
    <Help>This is Test</Help>
    <Variable name="Var1">
      <Attribute>23</Attribute>
      <Help>Variable Help</Help>
      <DateTime>2003-12-01T14:48:21</DateTime>
      <Value type="VT_I4">
        <IVal>4</IVal>
      </Value>
    </Variable>
  </Controller>
</CRD>
```

List 3-2**Sample.frm**

```
Private eng As CaoEngine
Private ctrl As CaoController
Private var As CaoVariable

Private Sub Form_Load()

    Set eng = New CaoEngine

    ' Connect Server
    Set ctrl = eng.Workspaces(0).AddController("RC1", "CaoProv.CRD", "", "Path=C:¥Sample.xml")

    ' Acquisition of variable
    Set var = ctrl.AddVariable("Var1")

End Sub

' Setting of variable
Private Sub Command1_Click()
    var = Text1.Text
End Sub

' Acquisition of variable
Private Sub Command2_Click()
    Text1.Text = var
End Sub
```