FUJITSU

A698HKBH9-E-U-0240

RFID Data Management Pro for Fixed Readers

User's Guide

June 2017
Version 2.40

Preface

This document explains how to use the fixed reader version of the RFID Data Management Pro for Fixed Readers (hereafter referred to as "this tool"). Be sure to read this document when using this tool.

■ Abbreviations and generic terms used in documents for Fujitsu RFID Integrated Label Solution

The documents use the following abbreviations and generic terms.

Name	Abbreviation used in this document
Microsoft® Windows® 7 Professional	“Windows 7”
Microsoft® Windows® 8.1 Professional	“Windows 8.1”
Microsoft® Windows® 10 Professional	“Windows 10“
Terminals where Windows 7, Windows 8.1, or Windows 10 has been installed Personal computer	“PC“
Reader/writer devices	“Reader device“
RFID tags	“Tag“
Printer for RFID tags	“RFID printer“
Fujitsu’s RFID Integrated Label – 8Kbyte (Large/Medium/Small)	“Large capacity RFID tag“ or “high memory tag“
Fujitsu’s RFID Integrated Label – 1Kbyte (Large/Medium/Small) Fujitsu's 2-kilobit RFID tags	“Tag“
NXP's RFID tags with a 240-bit EPC area and a 512-bit user area, and Impinji's RFID tags with a 128-bit EPC area and a 512-bit user area	“Small-capacity RFID tags“, “small-capacity tags“, “low memory tags“ or just “tags“
SAP Auto-ID Infrastructure	“SAP-AII“

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■ ATA (Air Transport Association of America) Spec 2000 Chapter 9-5

- This tool is designed to read and write data from and to tags in compliance with the specification for Radio Frequency Identification (RFID) on Parts in ATA Spec2000 Chapter 9-5.

■ High Risk Activity

- This product is designed and manufactured as contemplated for general use, including without limitation, general office use, personal use and household use, but is not designed and manufactured as contemplated for use accompanying fatal risks or dangers that, unless extremely high safety is secured, could lead directly to death, personal injury, severe physical damage or other loss (hereinafter called “High Safety Required Use”), including without limitation, nuclear reaction control, aircraft flight control, air traffic control, mass transport control, life support, and weapon launch control . The customer shall not use this product without securing the sufficient safety required for the High Safety Required Use.

■ Notes on export procedures

- When exporting or providing this product and this document, check the regulations under the Foreign Exchange and Foreign Trade Law and the laws and regulations relating to US export control, and complete the necessary procedures.

■ Screenshots and illustrations

- The screenshots and illustrations in this document are only examples, and the actual screens may be slightly different depending on the environment that you are using.
- The screenshots used in the explanations in this document are from a Windows 7 environment.

■ Other Notes

- No part of this document may be reproduced or reused for other purposes without the express written permission of Fujitsu Limited.
- The content of this document may change without prior notice.

■ Revision history

Edition	Date issued	Changes
Version 1.00	March 2013	Newly prepared
Version 1.10	July 2013	Support for ATA Spec2000 Rev.2013.1 and other changes
Version 1.11	November 2013	Support for Fujitsu's 2-kilobit tags and other changes
Version 2.00	April 2014	Support for Fujitsu's RFID Integrated Label 1Kbyte and 8Kbyte
Version 2.10	June 2014	1) Changed product name 2) Added new functions ・ Import tag data from CSV ・ Import tag data from SAP-AII message ・ Input data for multiple tags' Birth Record
Version 2.20	October 2014	Commercialization version
Version 2.30	March 2015	1) Added data validation function 2) Support for Window 8.1
Version 2.31	October 2015	Installation procedure changed & FX7500 addition
Version 2.32	April 2016	Changed the screen transition on startup
Version 2.33	October 2016	Function enhancement 1) Support for the EPC format for non-serialized parts 2) Support for Windows 10 3) Function addition of logging the written data on tag in XML
Version 2.40	June 20th 2017	Enhancement for ATA Spec 2000 Rev. 2016 support

CONTENTS

1 Function Overview of RFID Data Management Pro for Fixed Readers

1.1 Overview

This tool can initialize RFID tags by fixed RFID reader in the ATA formats specified in ATA Spec2000 Chapter 9-5, read and write ATA records from and to RFID tags that have been initialized in the ATA format based on ATA Spec2000 Chapter 9-5, and validate data on RFID tags. Files can also be read from and written to the tag using the custom user area.

1.2 Applications

This tool consists of the following three applications.

Name	Overview
RFID Data Encoder	This application initializes RFID tags using an ATA format as specified in ATA Spec2000 Chapter 9-5, and generates task files.
RFID Data Access	This function reads and writes ATA records from and to RFID tags that have been initialized in an ATA format as specified in ATA Spec2000 Chapter 9-5.
RFID Data Validation	This application compares EPC data in RFID tag that has been initialized in an ATA format as specified in ATA Spec2000 Chapter 9-5 and recorded data in EPC list generated when the data has been written, and save the comparison result as CSV file.

1.2.1 Function List

The following table lists the functions of this tool.

Name	Function		
RFID Data Access	Parts Maintenance Record	Display Birth Record	✓
		Update Birth Record	-
		Display Current Data Record	✓
		Update Current Data Record	✓
		Display User Scratchpad Record	✓
		Update User Scratchpad Record	✓
		Display Part History Record	✓
		Add Part History Record	✓
		Display Lifecycle Record	✓
		Update Lifecycle Record	✓
		Display Utility Record	✓
		Update Utility Record	✓
		Configure settings for showing or hiding TEIs	-
		Configure settings about whether TEIs are mandatory or optional	-
		Add or remove additional information TEIs (CSDD)	✓
		Add or remove additional information TEIs (custom information)	✓
	AIT File Manager	Display and update ATA records	✓
		Save, read, and delete files in the custom user area	✓
		Manage users	✓
RFID Data Encoder	Initialize tags		✓
RFID Data Validation	Compare EPCs retrieved from tags and EPCs recorded when they are initialized		✓

✓: Supported

-: Not supported

! Caution The AIT File Manager function supports only 8Kbyte tag. Please make an inquiry to Fujitsu Customer Support if using it.

1.2.2 Suite of User Manuals

The user manuals for this tool are organized as follows:

Manual title	Description
RFID Data Management Pro for Fixed Readers User's Guide	• This document • Explains how to use the fixed reader version of the “RFID Data Management Pro”
RFID Data Management Pro & RFID Label Design and Encoding Management Pro User's Guide Appendixes	•Explains the usage methods and provides other information about the “RFID Data Management Pro” and “RFID Label Design and Encoding Management Pro”

1.3 Messages

Messages may be displayed in popup dialog boxes, depending on conditions encountered during processing.

When an error is displayed, the normal processing is suspended.

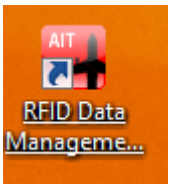
Refer to the *RFID Data Management Pro & RFID Label Design and Encoding Management Pro User's Guide Appendixes* for information on the messages displayed in the pop-up dialog box, and for guidance to eliminate the cause of the error.

If the cause of the error cannot be identified, please make an inquiry to Fujitsu Customer Support.

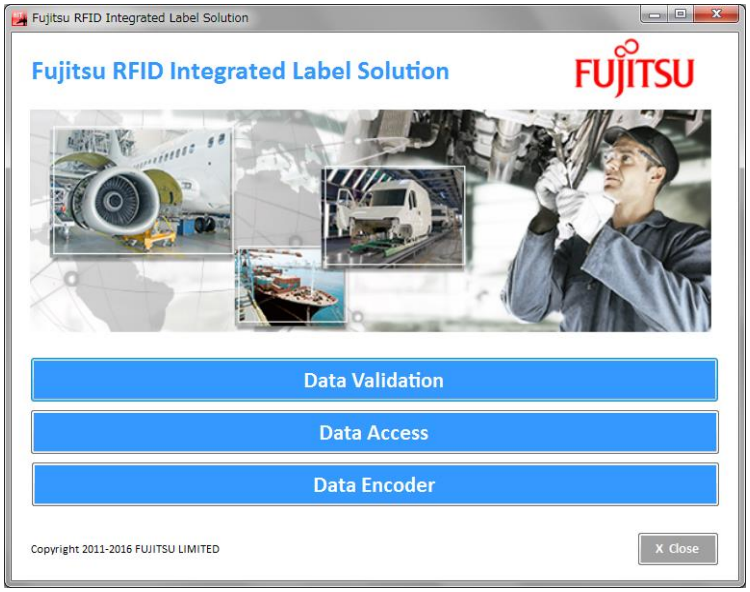
2 Start and Stop the Tool

2.1 Start the Tool

To start this tool, click the icon of **RFID Data Management Pro for Fixed Readers** that has been placed on the computer desktop.



The initial window is displayed.

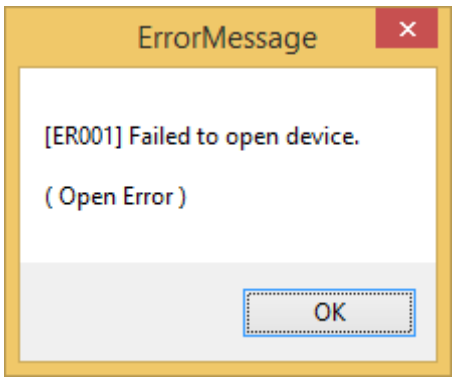


Click the application button which you want to use in order to open the application window. For the details of each application screen, please refer to the following sections.

- Data Validation: 5 RFID Data Validation
- Data Access: 4 RFID Data Access
- Data Encoder: 3 RFID Data Encoder

! Caution

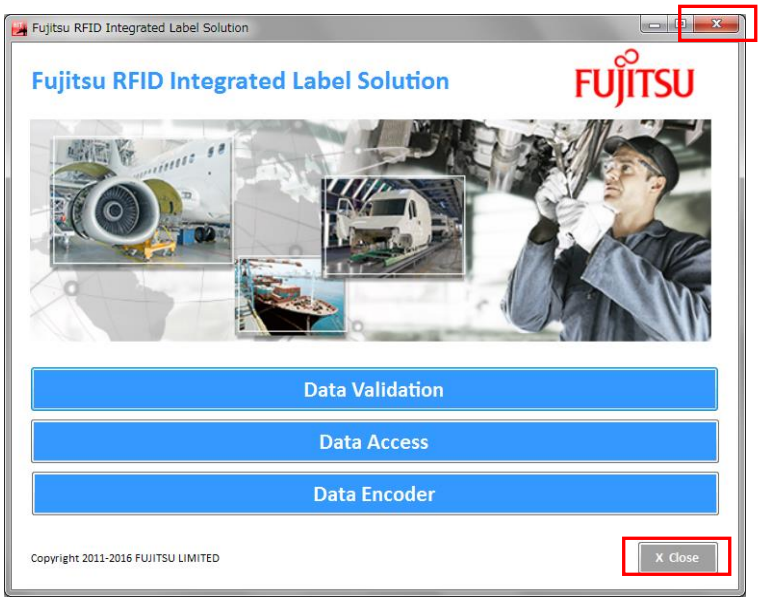
If click the Data Validation or the Data Access without connecting or before configuring any fixed reader, the following error message will be displayed. It may take a little while to display the error message because fixed readers need LAN connection.



If this error occurred, please stop the application once, and restart it after configuring and connecting fixed readers.

2.2 Stop the Tool

To close the tool, click either the **Close** button or the **[x]** button at the top right of the window.



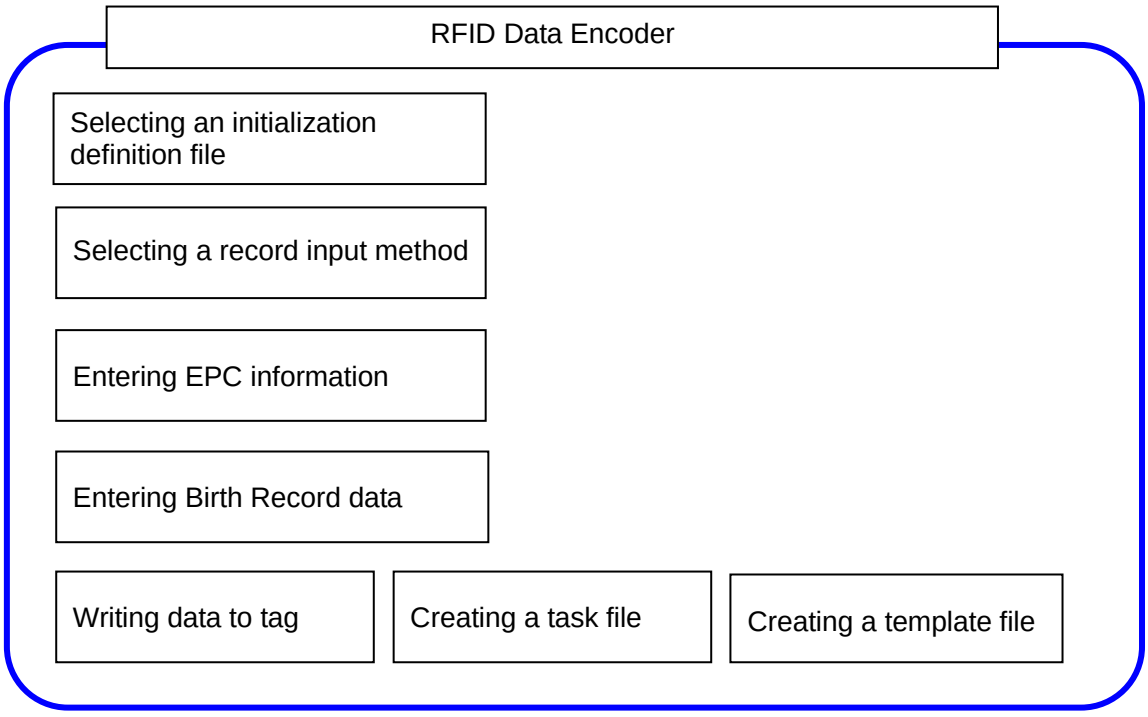
3 RFID Data Encoder

3.1 Overview

This application makes it possible to initialize tags using an ATA format as defined in ATA Spec2000 Chapter 9-5, as well as to create task files and template files.

3.2 Functions

This application includes the following functions.



3.3 Function Overview

This section provides an overview of the functions of this application.

- Selecting an initialization definition file

  This function is used to select an initialization definition file (XML) that defines such items as the size of the ATA area to be initialized.

- EPC generation

  This function automatically generates an EPC based on the values entered in the EPC information setup window and the values specified for the Birth Record TEIs. It is also possible to enter other values for “CAGE/DoDAAC”, “Original Part number”, and “Serial Number”.

- Selecting an record input method

  This function is used to select an input method for tag data. The user can select one of the following methods: import from csv file, import from SAP AII Messages, import from template file, manual input.

- Setting up Birth Record

  This function sets up the Birth Record. The user can select either of the following two methods: selecting a template file that defines the Birth Record, or entering the settings directly from the window.

- Writing data to tag

  This function initializes the tag using the selected definition files and the settings for each record. When tag initialization is only executed, a connection between the tag and the reader/writer device will be established so that data can be read and written.

- Creating a task file

  It is also possible to just create a task file, without initializing a tag.

  Task files are used with the AIT Tag Commissioning application for the RFID Data Management Pro for Mobile Computers.

  Refer to the *RFID Data Management Pro & RFID Label Design and Encoding Management User's Guide Appendixes* for details on task files.

- Creating a template file

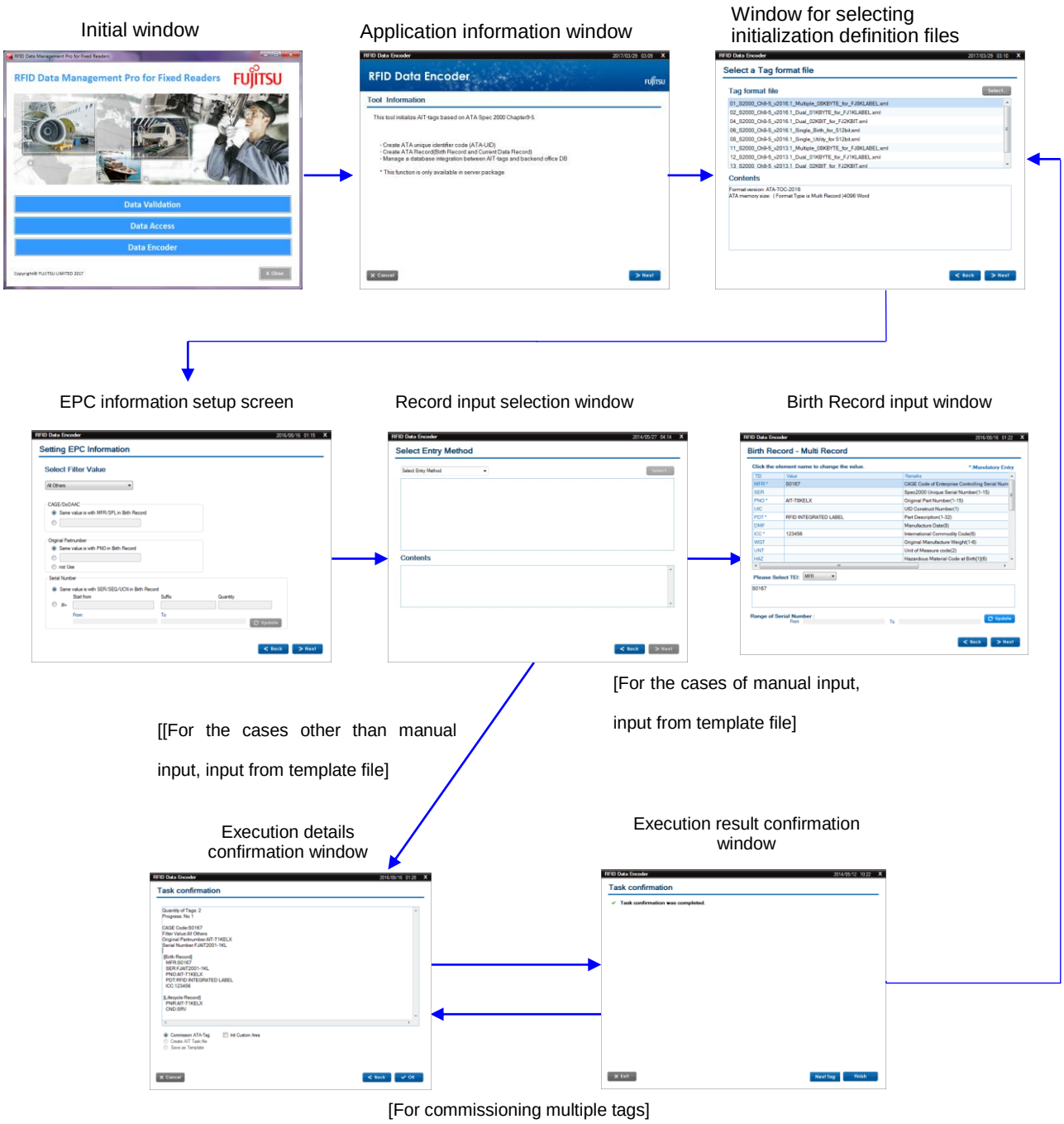
  It is also possible to just create a template file, without initializing a tag.

  Template files are used with the procedures for this application explained in Section 3.6.3 “Select a Record Input Method”.

! Caution	• When reading from or writing to a tag, always ensure that the tag is in a detectable state.

3.4 Screen Transitions

The following diagram illustrates the screen transitions of this application.

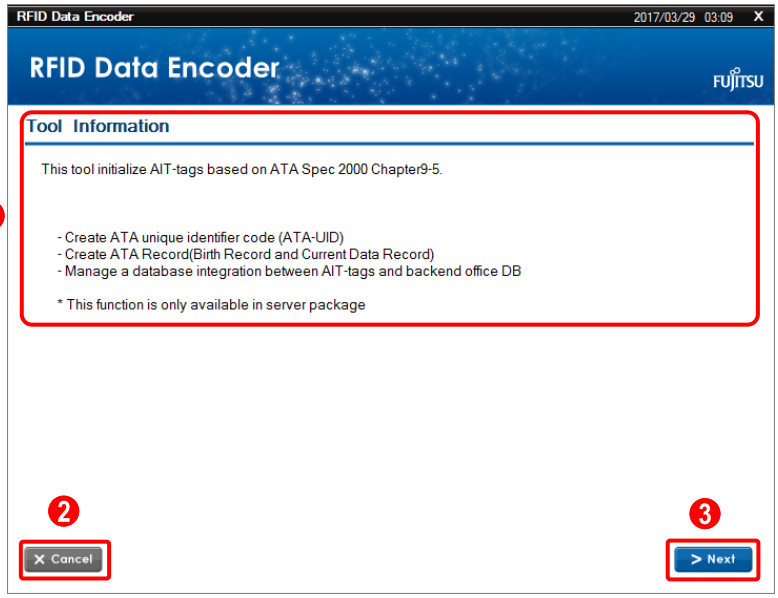


3.5 Start and Stop RFID Data Encoder

3.5.1 Start RFID Data Encoder

The **RFID Data Encoder** window is displayed.

If this operation is performed while the application is already running, an additional instance of the application will not be opened.



1 Tool Information

This area displays the version of the ATA Spec and the application's processing outline.

2 Cancel button

This button is used to close this application.

3 Next button

This button is used to display the next screen.

■ **Operating procedure**

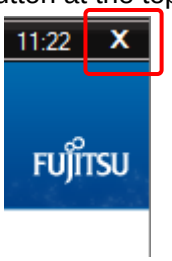
(1) Confirm the **Tool Information** window.

(2) Click the **Next** button.

- The **Select a Tag format file** window (the window for selecting an initialization definition file) will be displayed.

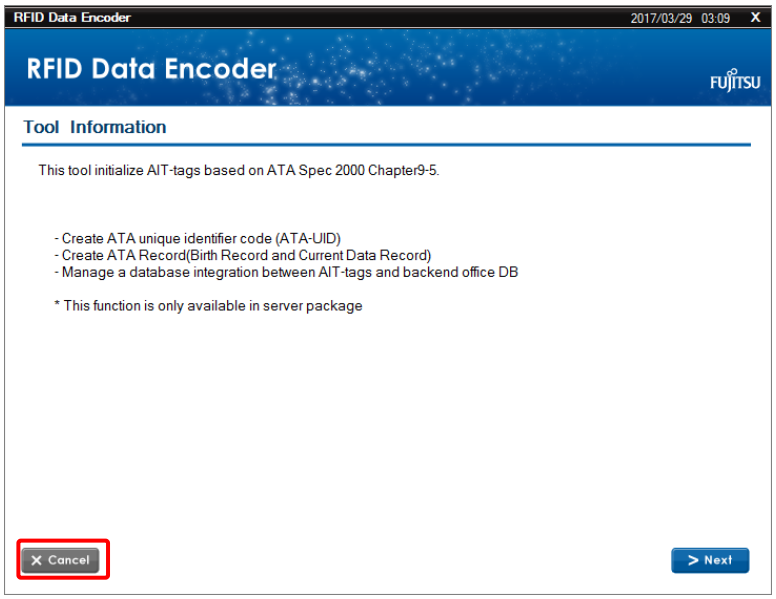
3.5.2 Stop RFID Data Encoder

To close the application, click the **[x]** button at the top right of the window.

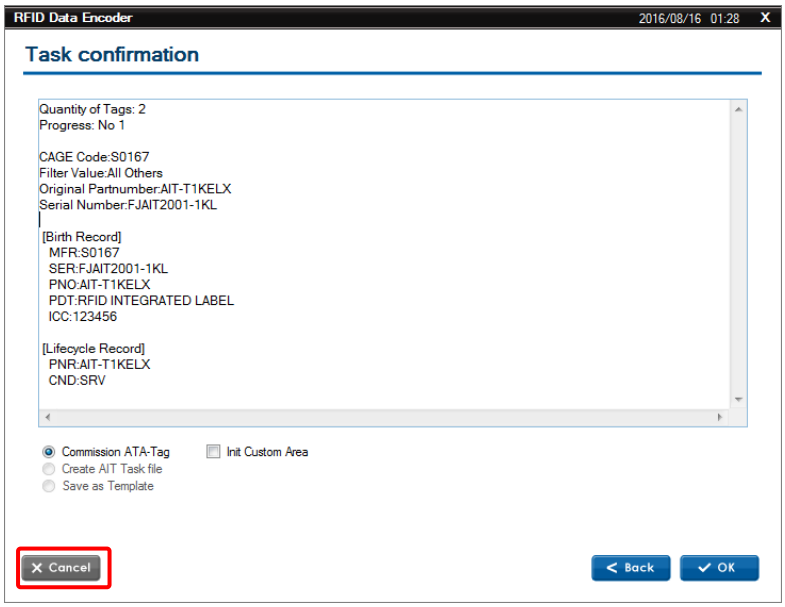


Alternatively, the application can also be closed by clicking the **Cancel** buttons on the application information window or the execution details confirmation window, or the **Exit** button on the execution result confirmation window.

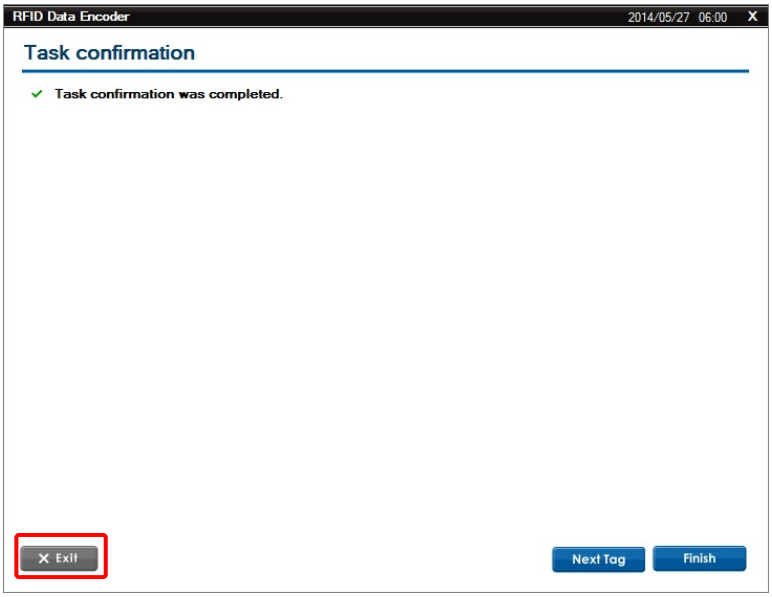
- Tool information window



- Execution details confirmation window



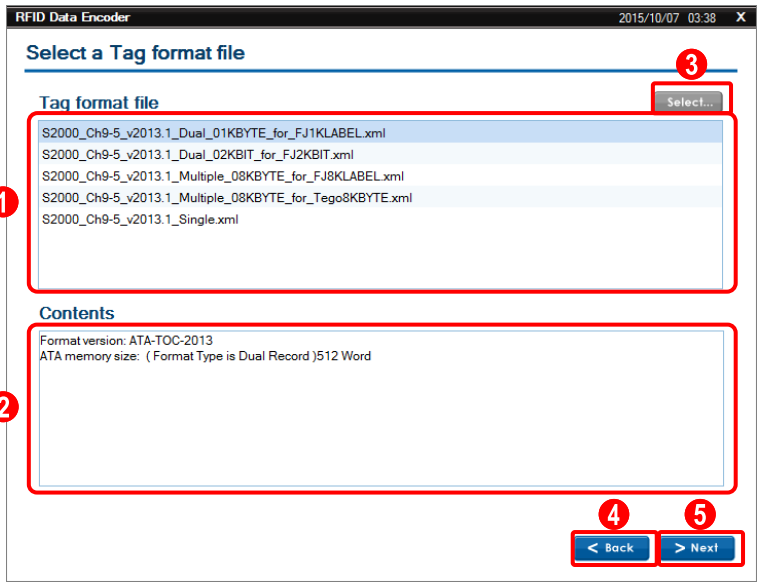
- Execution results confirmation window



3.6 Use AIT-tag Commission

3.6.1 Select an Initialization Definition File

Select the initialization definition file to be used to initialize the tag.



❶ **Tag format file** (list of initialization definition files)

This area displays a list of initialization definition files.

Clicking the **Select** button and selecting a folder displays a list of the XML files in the selected folder.

The file list that is first displayed is based on the folder that was selected last time.

(refer to 3.6.1.1 Initialization definition files list of default)

❷ **Contents**

This area displays the content of the file selected in the initialization definition file list.

If the selected file cannot be recognized as an initialization definition file, an error message will be displayed and the **Contents** area will be blank.

If this area is blank, the **Next** button will be grayed out.

❸ **Select** button

This button displays the folder selection dialog box.

The XML files in the selected folder will be displayed in the initialization definition file list.

❹ **Back** button

This button is used to display the previous window.

❺ **Next** button

This button is used to display the next window.

If the **Contents** area is blank, this button will be grayed out.

! Caution

- If “4096[Word]” is specified for SizeofUserMem when Fujitsu’s RFID Integrated Label – 8Kbyte (Large/Medium/Small) are initialized, do not initialize a custom user area. The tag initialization will fail, and the tag will become unusable.
  The following message will be displayed: “[EF010]]Failed to write to the custom user area”
- If “512[Word]” is specified for SizeofUserMem when Fujitsu’s RFID Integrated Label – 1Kbyte (Large/Medium/Small) is initialized, do not initialize a custom user area. The tag initialization will fail, and the tag will become unusable.
  The following message will be displayed: “[EF010] Failed to write to the custom user area”
- If SizeofCurData is not set, the tag initialization will fail.

3.6.1.1 Initialization definition files list of default

No.	Default Task File Name	ATA Version	Tag	User area length
01	01_S2000_Ch9-5_v2016.1_Multiple_08KBYTE_for_FJ8KLABEL.xml	2016(4.1)	the multi-record type of Fujitsu's RFID Integrated Labels – 8Kbyte (Large/Medium/Small)	8Kbyte
02	02_S2000_Ch9-5_v2016.1_Dual_01KBYTE_for_FJ1KLABEL.xml		the dual-record type of Fujitsu's RFID Integrated Labels – 1Kbyte (Large/Medium/Small)	1Kbyte
03	03_S2000_Ch9-5_v2016.1_Dual_02KBIT_for_FJSlimLabel.xml		the dual-record type of Fujitsu's RFID Integrated Labels Slim – 2Kbit	2Kbit
04	04_S2000_Ch9-5_v2016.1_Dual_02KBIT_for_FJ2KBIT.xml		the dual-record type of Fujitsu's 2Kbit RFID tags	2Kbit
05	05_S2000_Ch9-5_v2016.1_Single_Birth_02KBIT_for_FJSlimLabel.xml		the single birth-record type of Fujitsu's RFID Integrated Labels Slim – 2Kbit	2Kbit
06	06_S2000_Ch9-5_v2016.1_Single_Birth_for_512bit.xml		the single-record type of Fujitsu's small-capacity RFID tags	512bit
07	05_S2000_Ch9-5_v2016.1_Single_Utility_02KBIT_for_FJSlimLabel.xml		the single utility-record type of Fujitsu's RFID Integrated Labels Slim – 2Kbit	2Kbit
08	08_S2000_Ch9-5_v2016.1_Single_Utility_for 512bit.xml		the single-record type of Fujitsu's small-capacity RFID tags	512bit
11	11_S2000_Ch9-5_v2013.1_Multiple_08KBYTE_for_FJ8KLABEL.xml	2013(4.0)	the multi-record type of Fujitsu's RFID Integrated Labels – 8Kbyte (Large/Medium/Small)	8Kbyte
12	12_S2000_Ch9-5_v2013.1_Dual_01KBYTE_for_FJ1KLABEL.xml		the dual-record type of Fujitsu's RFID Integrated Labels – 1Kbyte (Large/Medium/Small)	1Kbyte
13	13_S2000_Ch9-5_v2013.1_Dual_02KBIT_for_FJ2KBIT.xml		the dual-record type of Fujitsu's 2Kbit RFID tags	2Kbit
14	14_S2000_Ch9-5_v2013.1_Single_512BIT.xml		the single-record type of Fujitsu's small-capacity RFID tags	512bit

3.6.1.2 Initialization Definition File

Refer to the sample initialization definition file below.

Sample initialization definition file (example)

```
<?xml version='1.0' encoding='UTF-8'?>
<AITTag>
  <InitInfo>
    <VersionDesc>ATA-TOC-2013</VersionDesc>
    <FlagTimeStamp>1</FlagTimeStamp>
    <ATAFormatType>1</ATAFormatType>
    <SizeofUserMem>2048</SizeofUserMem>
    <SizeofCurData>255</SizeofCurData>
    <SizeofMechanic>255</SizeofMechanic>
  </InitInfo>
</AITTag>
```

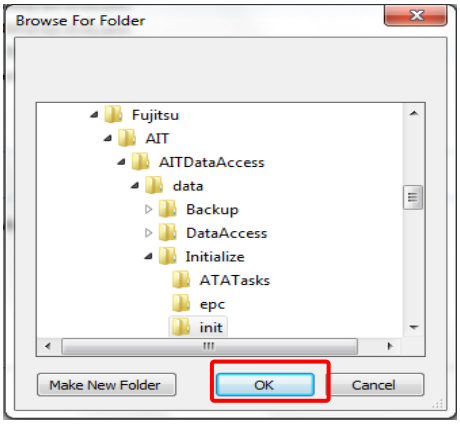
♦**Reference**

- Do not change any of the items in the sample file, except for the “SizeofUserMem” item.
  For the “SizeofUserMem” item, specify the size (in words) of the area for writing ATA records.
- Consider the type and capacity of the tag when selecting an initialization definition file and setting a size for “SizeofUserMem”.
- With multi-record tags, only values that are multiples of 1024 between 1024 and 30720 can be specified as valid values. Specify a value between 1024 and 4096 as the size when using Fujitsu’s RFID Integrated Label – 8Kbyte (Large/Medium/Small).
- With dual-record tags, only 96 and values that are multiples of 256 between 512 and 2048 can be specified as valid values. Specify 96 as the size when using Fujitsu’s 2Kbit RFID tags. Specify 512 as the size when using Fujitsu’s RFID Integrated Label – 1Kbyte (Large/Medium/Small).Specify 512 or more as the size when using Fujitsu’s RFID Integrated Label – 8Kbyte (Large/Medium/Small).
- With single-record tags, values between 16 and 128 can be specified. Specify 32 as the size when using small-capacity RFID tags.

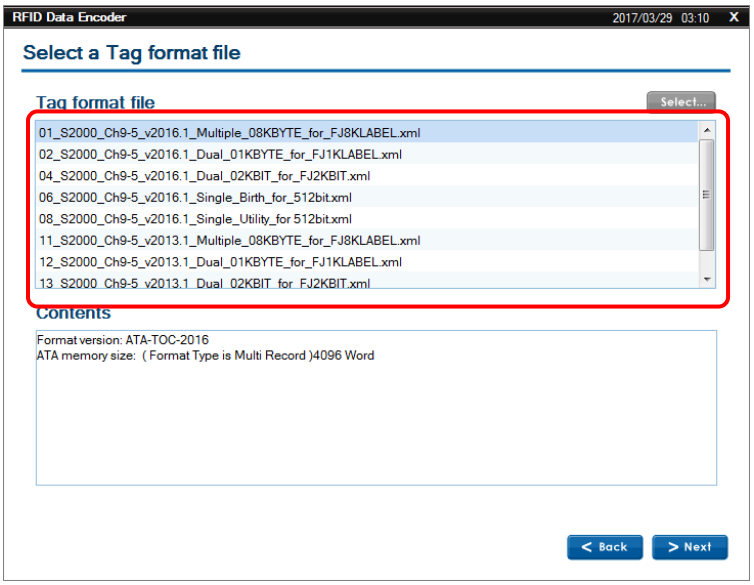
■ Operating procedure

(1) Click the **Select** button.

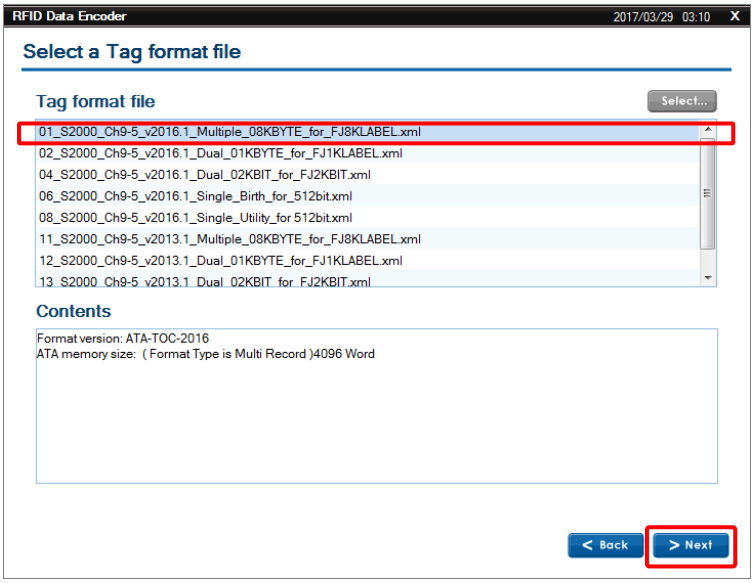
(2) In the displayed dialog box, navigate to the folder containing the Tag Format files, and then click the **OK** button.



(3) A list of the XML files in the selected folder will be displayed.

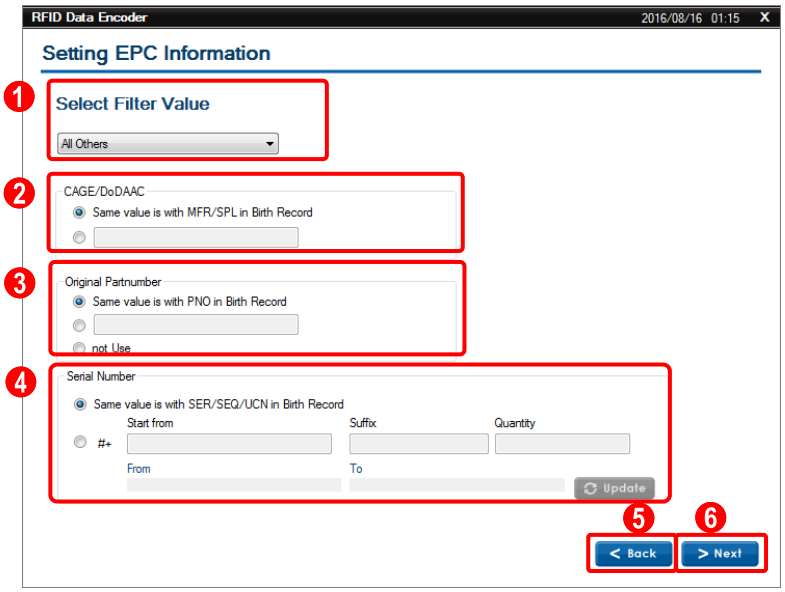


(4) Select the target file and then click the **Next** button.



3.6.2 Enter EPC Information

Enter the EPC information.



1 Filter Value list

This list displays the Filter Values that can be selected.

Select the Filter Value to be set to the EPC.

2 **CAGE/DoDAAC**

If the “Same value is with MFR/SPL in Birth Record” is selected, the CAGE/DoDAAC in EPC is automatically copied from MFR/SPL in Birth Record. It is also possible to manually enter CAGE/DoDAAC.

3 **Original Part number**

If the “Same value is with PNO in Birth Record” is selected, the Original Part Number in EPC is automatically copied from PNO in Birth Record. It is also possible to manually enter the Original Part Number.

4 **Serial Number**

If the “Same value is with SER/SEQ/UCN in Birth Record” is selected, the Serial Number in EPC is automatically copied from SER/SEQ/UCN in Birth Record. It is also possible to manually enter the Serial Numbers.

- Start from： Serial Number for the first tag (the common suffix for all tags is not included). (Figure number of digits for the greatest is assumed to be 18 digits.)
- Suffix：The common fixed value at the end of Serial Numbers for all tags.
- Quantity： Quantity of tags to be commissioned.
- From / To： Displaying the range of Serial Numbers for all tags.

❺ **Back** button

This button is used to display the previous window.

❻ **Next** button

This button is used to display the next window.

■ Operating procedure

(1) Use the Filter Value list to select the Filter Value to be set to the EPC.

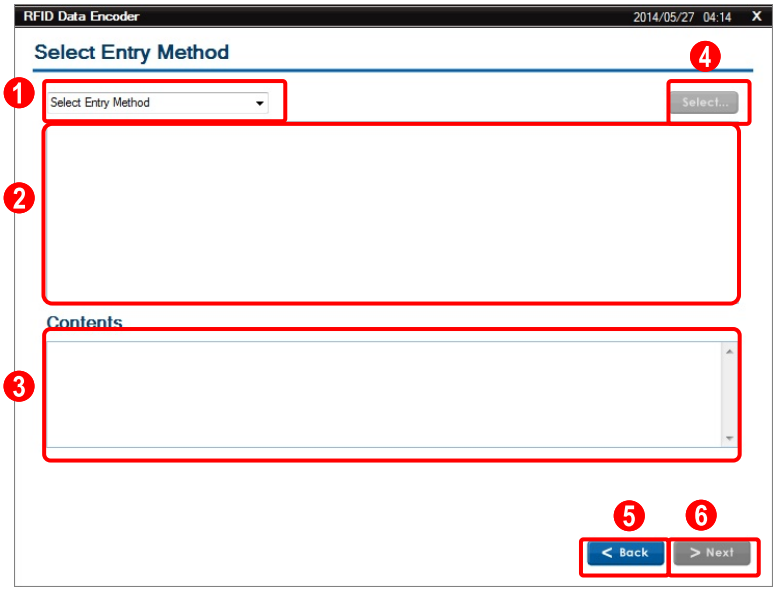
(2) If different values from Birth Record are used, enter **CAGE/DoDAAC**, **Original Part Number**, and **Serial Number**.

(3) Click the **Next** button.

3.6.3 Select a Record Input Method

Select a record input method.

If **Enter Birth Record from templates** has been selected, select a template file.



1 Select Entry Method

Select one of the following input methods for tag data:

- Import from CSV File: import data from CSV file
- Import from SAP AII Messages: import data from SAP-AII(Auto-Id Infrastructure) message
- Import from XML Template: import data from template file
- Manual Input: input data manually

When any option other than “Manual Input” is specified, the **Select** button is enabled.

2 File list

This area displays a list of files for importing data if the option other than “Manual Input” is specified in the **Select Entry Method** dropdown.

Clicking the **Select** button and selecting a folder displays a list of the files in the selected folder.

3 Contents

This area displays the content of the file selected in the file list if the option other than “Manual Input” is specified in the **Select Entry Method** dropdown.

If the selected file cannot be recognized as a tag data file, an error message will be displayed and the **Contents** area will be blank.

If this area is blank, the **Next** button will be grayed out.

❹ **Select** button

This button displays the folder selection dialog box.

The CSV file or the XML files in the selected folder will be displayed in the file list.

❺ **Back** button

This button is used to display the previous window.

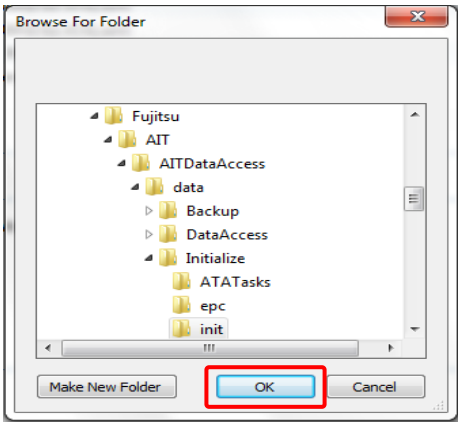
❻ **Next** button

This button is used to display the next window.

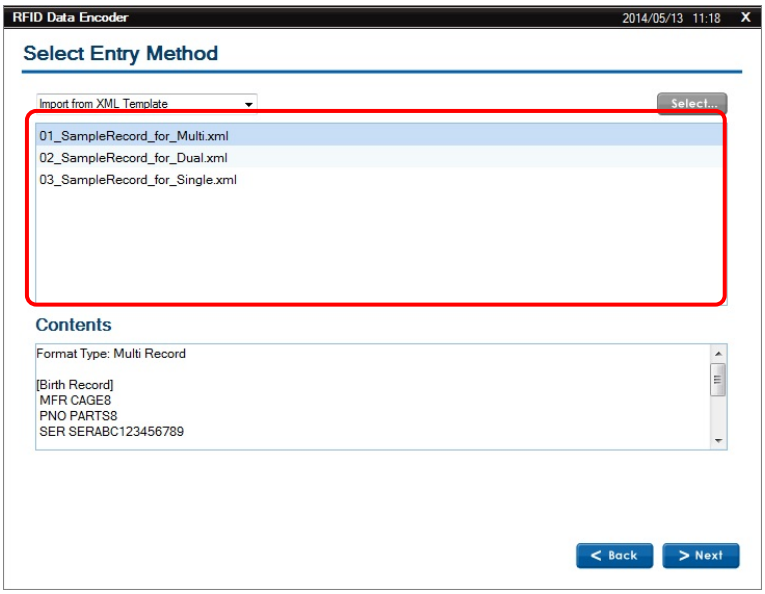
■ Procedure (when non-“Manual Input” has been selected)

(1) Select one option other than **Manual Input** in the **Select Entry Method** dropdown and then click the **Select** button.

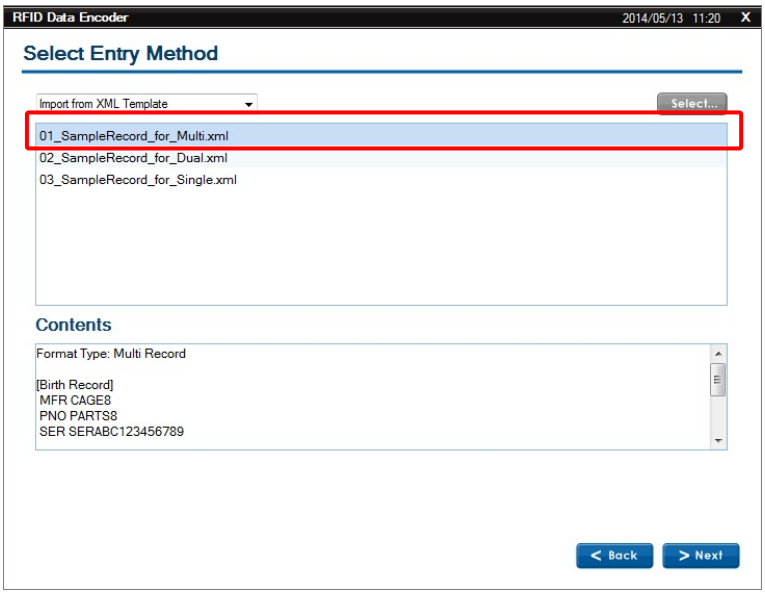
(2) In the displayed dialog box, navigate to the folder containing the template files, and then click the **OK** button.



(3) A list of the files in the selected folder will be displayed.

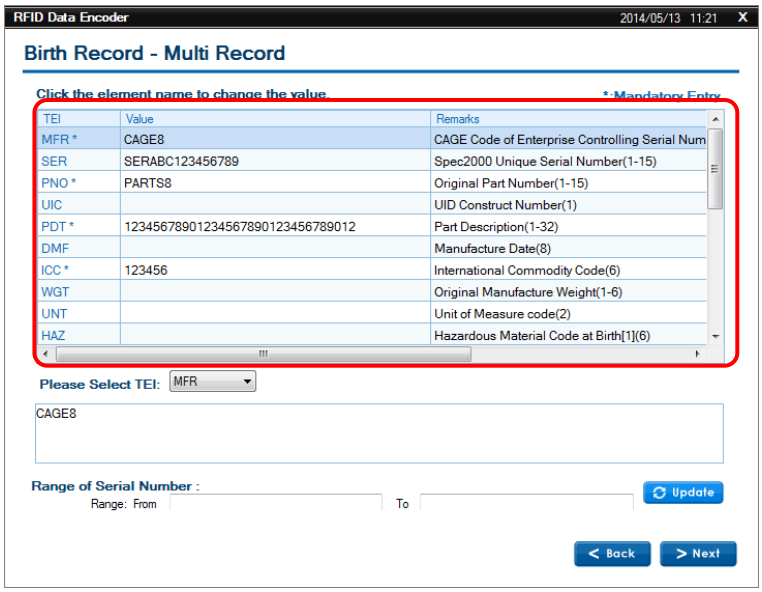


(4) Select the target file and then click the **Next** button.

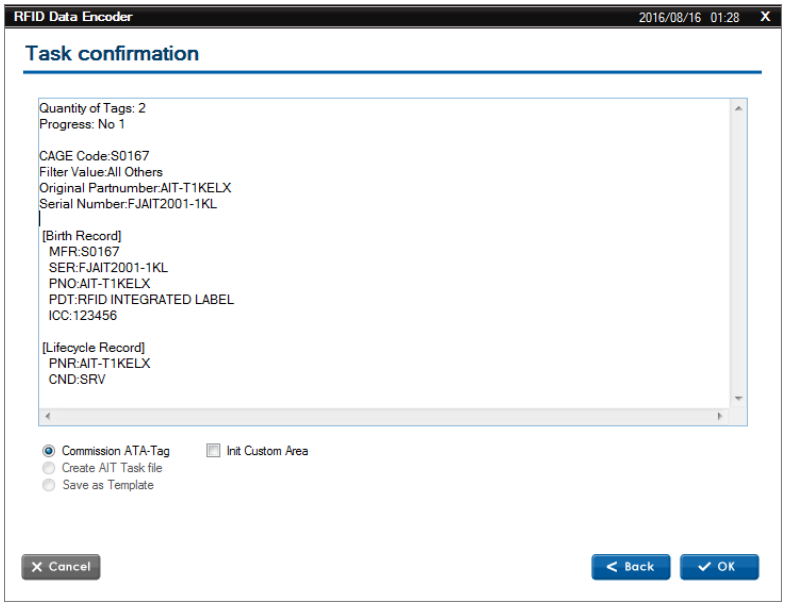


(5) The content of the file will be displayed.

In case of **Import from XML Template**

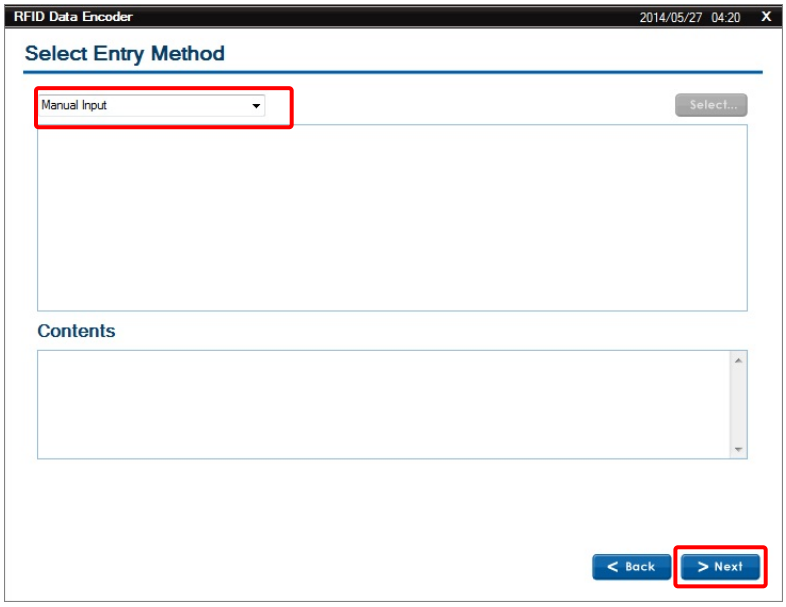


In case of **Import from CSV File** or **Import from SAP All Messages**



■ Procedure (when Manual Input has been selected)

(1) Select the **Manual Input** in the **Select Entry Method** dropdown and then click the **Next** button.



(2) The Birth Record input window will be displayed.

3.6.3.1 CSV File

This application is able to import CSV file with tag data. Each record on CSV file corresponds to the data for a tag. The format of the CSV file is described as follows. TEIs (aka Item Name) are used as column headers in the file.

No	Item Name	Detail
1 ～ N	[TEI Name]	Set the TEI for Birth Record according to the format type defined in ATA SPEC2000. Mandatory TEI and the TEI corresponding to Spec 2000 Unique Serial Number (SER/SEQ/UCN) should be set. In case of Dual Record, CND for Lifecycle Record should also be set. If a specific TEI appears multiple times, the Item name should be defined in the format as [TEI Name]␣([Number]). For example: HAZ (1), HAZ (2), HAZ (3). If a specific value of a specific TEI need to be encoded to the tag, the value should be set in corresponding row for that TEI. Refer to the *RFID Data Management Pro & RFID Label Design and Encoding Management Pro User's Guide Appendixes – Appendix C – TEI Input* for information about mandatory TEIs.

Sample CSV file (example)

MFR	SER	PNO	PDT	ICC
CAGEM	B00001	PARTS64	A12345678901234567890123456789O1	C12345
CAGEM	B00002	PARTS64	A12345678901234567890123456789O1	C12346
CAGEM	B00003	PARTS64	A12345678901234567890123456789O1	C12347

3.6.3.2 SAP-AII (Auto-Id Infrastructure) Message

This application is able to import the Command message generated from SAP-AII in the form of an xml file with tag data. Refer to *SAP AII-DC 1.0 for* the detail information of schema of Command message (Command.xsd).

The elements and attributes in Command.xsd used by this application are described as follows.

Table. Elements, Attributes and Rules in Command.xsd

No	Element Name	Rule	Detail
1	/Command/WriteTagData/Item	Minimum Occurrence: 1 Maximum Occurrence: Unbounded	The element contains the data to be written to the tag. Each “Item” element corresponds to one tag. To contain multiple tags’ data, “Item” should be defined in multiple times.
2	/Command/WriteTagData/Item/FieldList/Field	Minimum Occurrence: 1 Maximum Occurrence: Unbounded Mandatory Attribute: name	The element contains EPC value, TEI of Birth Record corresponding to the format type defined in ATA SPEC2000 and the item name, item value to be printed on the label of a tag. Each “Field” element corresponds to one of above items. The relation between the categories and the values of these items, detail of rules are described in the table below.
3	/Command/WriteTagData/Item/FieldList	Minimum Occurrence: 1 Maximum Occurrence: Unbounded Optional Attribute: format	This element is the parent element of “Field” element. “Format” attribute can be used to define the name of a label layout which is used by RFID printer.

Table. Relation between Tag Data, Label Data and Field Elements in Command Message

No	Memory Bank in Tag	Item Name in ATA SPEC	Definition of Name Attribute for Field Element	Value of Field Element	Mandatory / Optional	Detail
1	EPC	-	EPC	Hexadecimal value of EPC	Optional	This item contains hexadecimal value of EPC data to be written to the tag. (Business data only, not including PC bit) **Creation of EPC Data:** If this item is defined, the value contained in this item will be written to EPC memory on the tag. If this item is not defined, the data to be written to EPC memory on the tag will be generated from “Filed” elements defined in the table below. If “EPC_FilterValue” is not defined, however, the filter value selected in “EPC information setup screen”.

<table>
<tr><th>No</th><th>Memory Bank in Tag</th><th>Item Name in ATA SPEC</th><th>Definition of Name Attribute for Field Element</th><th>Value of Field Element</th><th>Mandatory / Optional</th><th>Detail</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td><table>
<tr><th>Value of Name Attribute</th><th>Item in EPC</th></tr>
<tr><td>EPC_Filter Value</td><td>Filter Value</td></tr>
<tr><td>TEI_MFR or TEI_SPL</td><td>Manager number CAGE/DoDAAC</td></tr>
<tr><td>TEI_PNO</td><td>Original Part Number(PNO)</td></tr>
<tr><td>TEI_SER or TEI_SEQ or TEI_UCN</td><td>Spec 2000 Unique Serial Number (SER or SEQ or UCN)</td></tr>
</table></td></tr>
<tr><td>2</td><td>EPC</td><td>EPC Filter Value</td><td>EPC_FilterValue</td><td>Value of Filter Value</td><td>Optional</td><td>This item contains the value of Filter Value to be written to the EPC memory on the tag.</td></tr>
<tr><td>3～N</td><td>Birth Record</td><td>[TEI Name]</td><td>TEI_[TEI Name]</td><td>Value of TEI. Compliant with the definition in ATA SPEC2000</td><td>Compliant with the definition in ATA SPEC2000. Spec 2000 Unique Serial Number is mandatory. CND in Lifecycle Record is mandatory in case of Dual Record.</td><td>This item contains TEI of Birth Record corresponding to the format type defined in ATA SPEC2000. If a specific TEI appears multiple times, the Item name should be defined in the format as TEI_[TEI Name]_[Number]. For example: TEI_HAZ_1, TEI_HAZ_2, TEI_HAZ_3.</td></tr>
</table>

Sample SAP-AII Message 1 (Containing Value of EPC)

```
<?xml version="1.0" encoding="UTF-8" ?>
<Command xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNamespaceSchemaLocation="Command.xsd">
<WriteTagData readerID="Writer_Device">
<Item>
<FieldList format="FJ Label Large.BTW" jobName="ZXP7_Job" quantity="1">
    <Field name="EPC">3B4604F0C76DD03B00420F1CB3D35DB7E390131520420F1CB3D35DB7E3900000</Field>
    <Field name="TEI_MFR">S0167</Field>
    <Field name="TEI_SER">SERABC123456789</Field>
    <Field name="TEI_PNO">PN0ABC123456789</Field>
    <Field name="TEI_PDT">PDTABCDEFGHIJKLMN1234567890_+?</Field>
    <Field name="TEI_DMF">20001122</Field>
    <Field name="TEI_ICC">123456</Field>
    <Field name="TEI_HAZ_1">UN1122</Field>
    <Field name="TEI_HAZ_2">UN3344</Field>
    <Field name="TEI_HAZ_3">UN5566</Field>
</FieldList>
 </Item>
 </WriteTagData>
</Command>
```

Sample SAP-AII Message 2 (Not Containing Value of EPC)

```
<?xml version="1.0" encoding="UTF-8" ?>
<Command xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:noNamespaceSchemaLocation="Command.xsd">
<WriteTagData readerID="Writer_Device">
<Item>
<FieldList format="FJ Label Large.BTW" jobName="ZXP7_Job" quantity="1">
    <Field name="EPC_FilterValue">17</Field>
    <Field name="TEI_MFR">S0167</Field>
    <Field name="TEI_SER">SERABC123456789</Field>
    <Field name="TEI_PNO">PN0ABC123456789</Field>
    <Field name="TEI_PDT">PDTABCDEFGHIJKLMN1234567890_+?</Field>
    <Field name="TEI_DMF">20001122</Field>
    <Field name="TEI_ICC">123456</Field>
    <Field name="TEI_HAZ_1">UN1122</Field>
    <Field name="TEI_HAZ_2">UN3344</Field>
    <Field name="TEI_HAZ_3">UN5566</Field>
</FieldList>
 </Item>
 </WriteTagData>
</Command>
```

3.6.4 Enter Birth Record

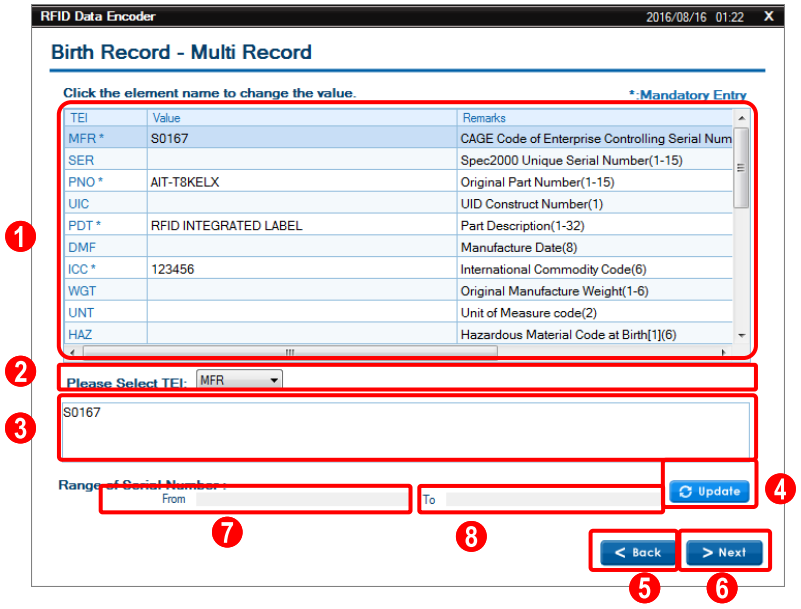
Enter a Birth Record.

- If **Import from XML Template** has been selected

  The content of the template will be displayed as the initial values.

- If **Manual Input** has been selected

  No initial values will be displayed.



1 TEI list

This list displays the TEI values and remarks explaining the TEI values.

- **TEI**

  This column displays TEIs.

- **Value**

  This column displays the value that has been specified for the TEI.

- **Remarks**

  This column displays a description of the TEI and the number of characters that can be entered.

2 TEI description

This area displays the remark for the TEI selected in the TEI list, as well as whether the TEI is mandatory.

Also select the TEI to be defined if necessary.

3 Input area

This area displays the value of the TEI selected in the TEI list. The value can be changed if necessary.

❹**Update** button

This button replaces the value in the **Value** column of the TEI that has been selected in the **TEI** list with the content of the input area.

❺**Back** button

This button is used to display the previous window.

❻**Next** button

This button is used to display the next window.

❼**From** area

This area displays the Spec 2000 Unique Serial Number for the first tag if continuously commissioning multiple tags. A blank will be displayed until a value of Spec 2000 Unique Serial Number is input.

❽**To** area

This area displays the Spec 2000 Unique Serial Number for the last tag if continuously commissioning multiple tags. Spec 2000 Unique Serial Number will be blank until a value is input. A blank will be displayed until a value of Spec 2000 Unique Serial Number is input.

♦ **Reference:**	• The asterisk (“*”) to the right of the TEI code for some data input fields indicates that the item is a mandatory input item.
	• To the right of each item an explanation of the TEI is displayed, along with the maximum number of characters that can be entered. For example, “1-5” means that 1 to 5 characters can be entered.

• This application uses the information entered in the EPC information setup window and the Birth Record input window to create an EPC to be written to the tag. The following table shows the correspondence between the input information and the EPC items.

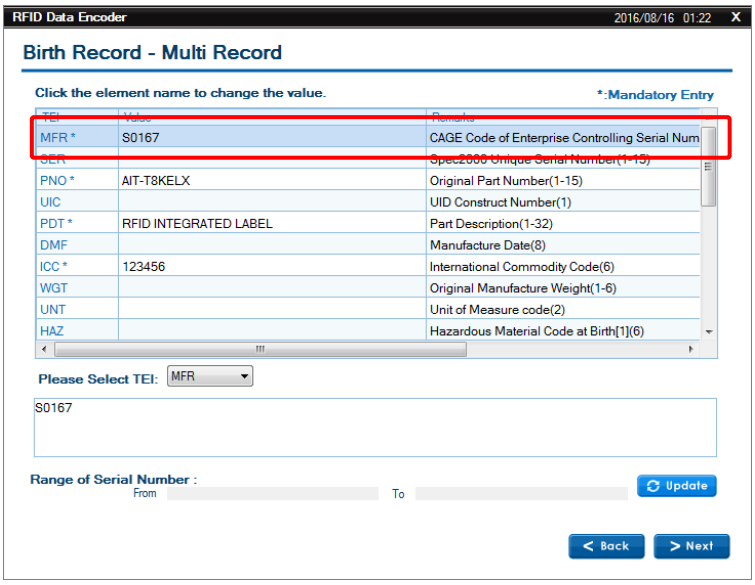
Input item in this application	EPC item
EPC information setup window [Select Filter Value]	Filter Value
Birth Record input window [MFR/SPL] Setting EPC information window [CAGE/DoDAAC]	Manager number CAGE/DoDAAC
Birth Record input window [PNO] Setting EPC information window [Original Part Number]	Original Part Number(PNO)
Birth Record input window [SER/SEQ/UCN] Setting EPC information window [Serial Number]	Spec 2000 Unique Serial Number (SER or SEQ or UCN)

! Caution

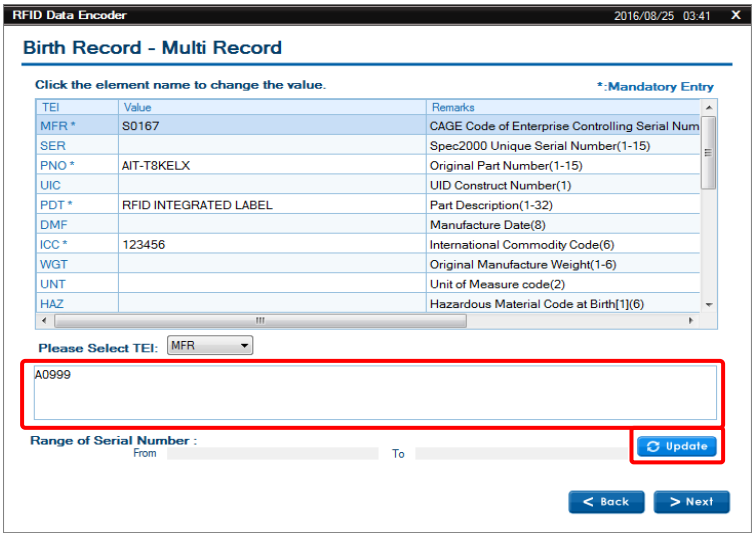
- If a template file that comes with this application is selected, sample values will be displayed in the **Value** column of the TEI list. These sample values cannot be used as they are, so change them to the appropriate values.
- If the **Next** button is clicked without clicking the **Update** button, a message will be displayed indicating that the **Update** button has not been clicked.
- For single-record and dual-record tags, the characters that can be entered are the 6-bit characters defined in table A13-2, “ASCII Conversion Chart” in Appendix 13, “6 Bit ASCII Encoding” of *ATA Spec2000.* If characters other than valid characters are entered, an error message will be displayed and processing will be canceled. The following error message will be displayed: “[ER015] Failed to write Birth Record to the tag. (Invalid parameter)”

■ Operating procedure (Items other than Spec 2000 Unique Serial Number)

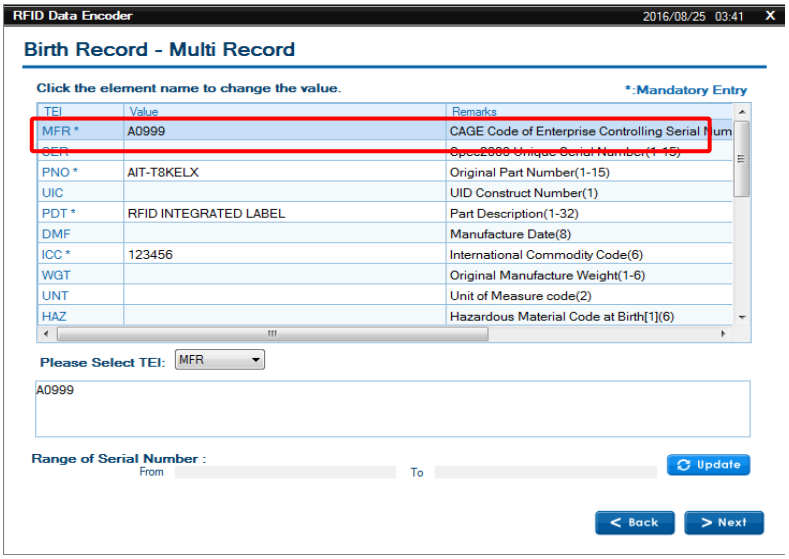
(1) Select the TEI to be updated in the TEI list.



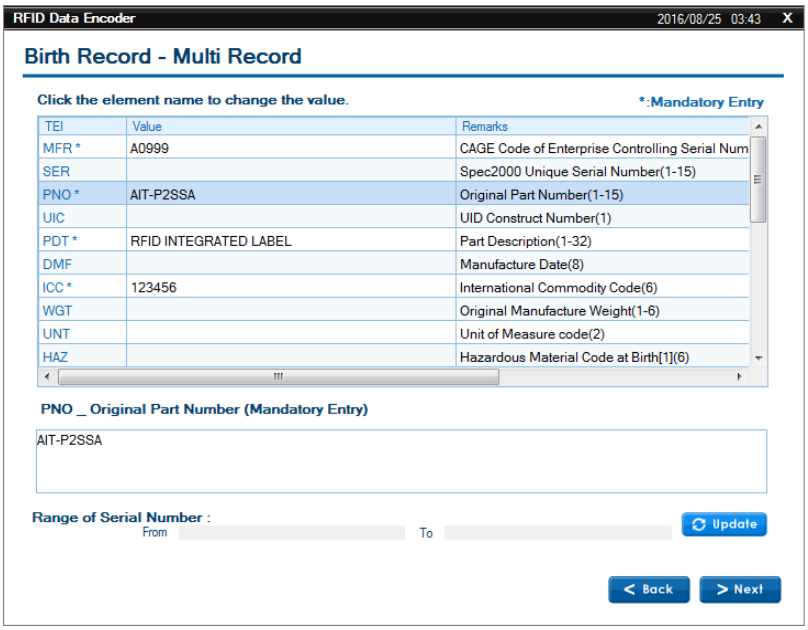
(2) Change the content displayed in the input area, and then click the **Update** button. An error message will be displayed if there is an error with the value entered.



(3) The value in the TEI list will be updated with the modified content.

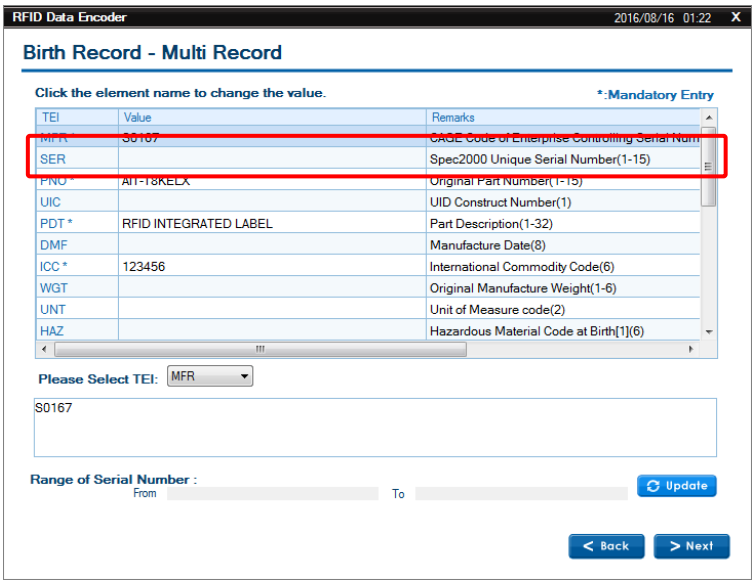


(4) Repeat Steps (1) to (3) and then click the **Next** button when the data input is complete.



■ Operating procedure (Items related to Spec 2000 Unique Serial Number)

(1) Select the **SER** in the TEI list.



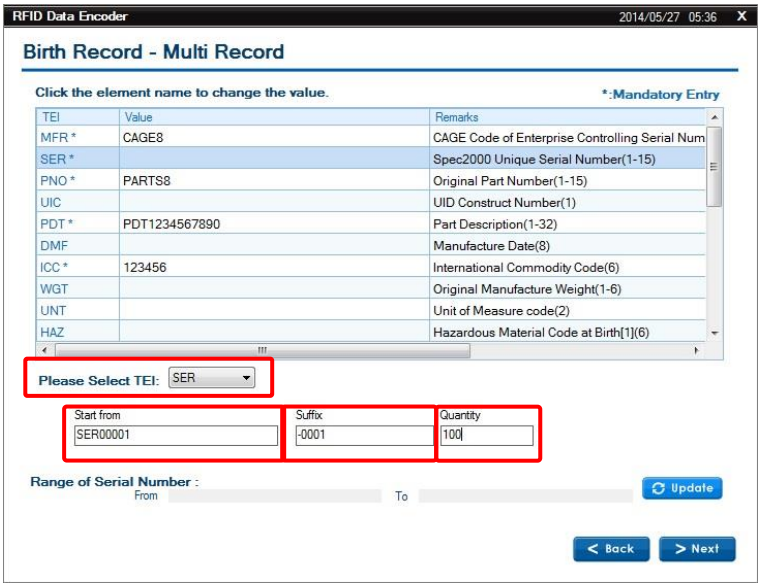
(2) Change the content displayed in the input area, and then click the **Update** button. An error message will be displayed if there is an error with the value entered.

Please Select TEI: Select a TEI.

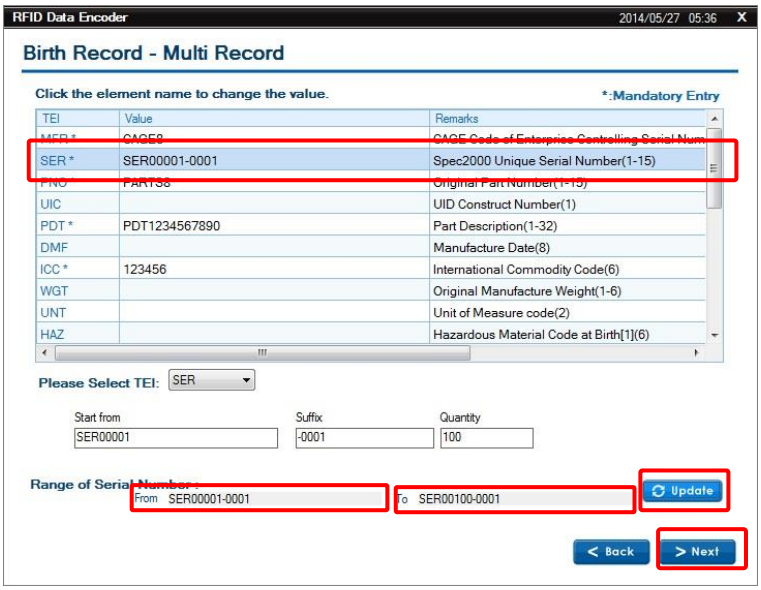
Start from: Input the Serial Number for the first tag. However, the common suffix existing in the data all tags should not be input.

Suffix: Input the common fixed value at the end of Serial Numbers for all tags.

Quantity: Input the quantity of tags to be commissioned. The default value is 1 if no value is input.



(3) The **From** area and **To** area displaying the range of Serial Number for all tags are updated when clicking the **Update** button. The TEI and value of Serial Number in the TEI list will be updated with the entered content for the first tag. An error message will be displayed if there is an error with the value entered.

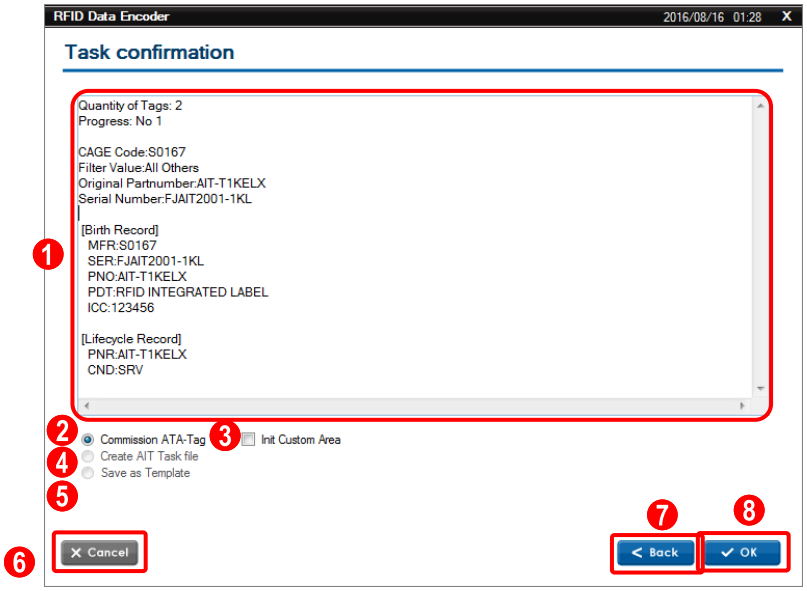


3.6.5 Confirmation and Execution

Check the content of the data that was entered in the record input windows, and then select which type of processing to perform before executing the processing.

One of the following three types of processing can be selected.

- Writing data to tag
- Creating a task file
- Creating a template file



❶ Input content display area

This area displays the content of the data that was entered in the record input windows.

❷ **Commission ATA-Tag** radio button

Select this radio button to initialize the tag, overwrite the EPC and write record data.

❸ **Init Custom Area** checkbox

Select this checkbox to initialize the custom user area.

Note: To use a custom user area, this area must be initialized.

❹ **Create AIT Task file** radio button

Select this radio button to create a task file that can be read using the RFID Data Management Pro for Mobile Computers.

Note that task files are created using the following naming rule:

UnskAITTask_INIT_(*creation date/time*) _P.xml

Refer to the *RFID Data Management Pro & RFID Label Design and Encoding Management Pro User's Guide Appendixes* for details on task files.

This radio button is disabled in case of continuously commissioning multiple tags.

❺ **Save as Template** radio button

Select this radio button to create a template file that can be used with the input windows for the Birth Record.

This radio button is disabled in case of continuously commissioning multiple tags.

❻ **Cancel** button

This button is used to close this application.

❼ **Back** button

This button is used to display the previous window.

❽ **OK** button

This button executes the processing that has been selected.

When the “OK” button is clicked, the written data to tags is recorded in the XML file.

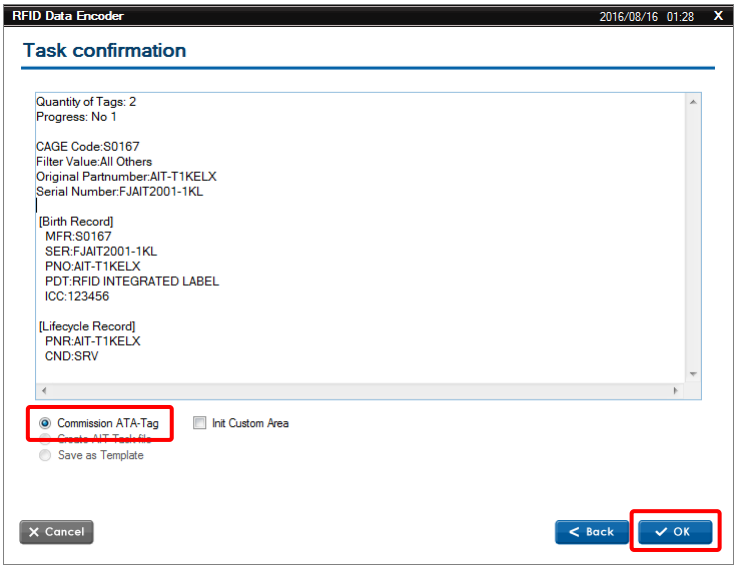
The file name format is “MR/DR/SR-BR-Internet Protocol address yyyymmddhhmmss.xml”.

In the case of commissioning multiple tags, all the data will be output in the same file.

♦ **Reference:**	• If the custom user area is initialized using this application, then the maximum number of folders in the custom user area (i.e., user folders) is 8.

!Caution	• If multiple tags are detected when a tag is initialized, an error message will be displayed and processing will be canceled. The following message will be displayed: “[IX009] Multiple tags have been detected during initialization.” • To use a custom user area, be sure to select the **Init Custom Area** checkbox. The custom user area must be initialized at the same time as the tag. • If an attempt is made to initialize a tag that has already been initialized, the initialization will fail. In this case, the tag may become unusable, so never try to initialize a tag that has already been initialized.

■ Operating procedure (for Commission ATA-Tag option)

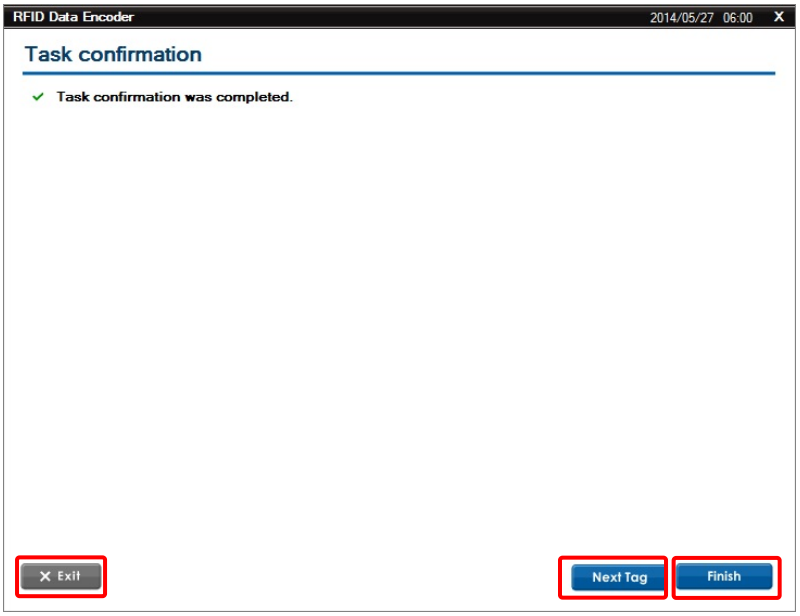


(1) Select the corresponding processing option and then click the **OK** button. An error message will be displayed if an error occurs.

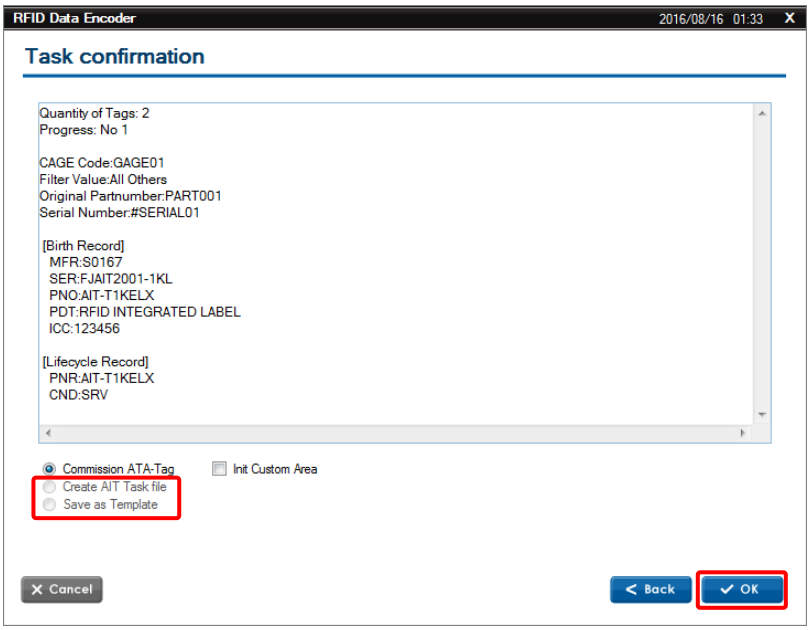
(2) Tag commissioning process starts. If the process is successful, an execution result window will be displayed.

(3) If data for multiple tags are entered, click the **Next Tag** button to repeat Steps from (1). If the tag commissioning is completed or if the tag commissioning needs to be aborted, click the **Finish** button. The display will return to the window for selecting an initialization definition file.

(4) Clicking the **Exit** button closes the application.



■ Operating procedure (for Create AIT Task file or Save as Template options)

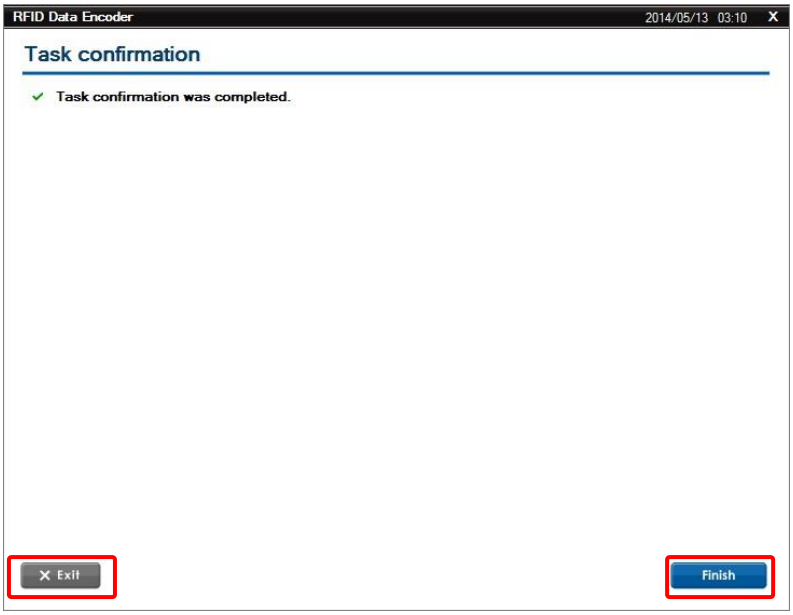


(1) Select the corresponding processing option and then click the **OK** button. An error message will be displayed if an error occurs.

(2) Specify where to save the file. If the processing is successful, an execution result window will be displayed.

(3) If the **Finish** button is clicked, the display will return to the window for selecting an initialization definition file so that another operation can be performed.

(4) Clicking the **Exit** button closes the application.



3.6.6 XML Format of Commission Data

The commission data is output in the following XML file format in the XML file.

No	XML tag	Data
1	<DataEncoder>	
2	<RFIDTag>	Data organized by each writing operation
3	<TimeStamp></TimeStamp>	Timestamp (yyyy/MM/dd H:m:s)
4	<Action></Action>	“Write”
5	<TID></TID>	TID value
6	<Epc></Epc>	EPC value
7	<EpcHeader></EpcHeader>	EPC Header value
8	<EpcFilterValue></EpcFilterValue>	Filter Value
9	<EpcManagerNumber></EpcManagerNumber>	Manager Number of EPC
10	<EpcOriginalPartNumber></EpcOriginalPartNumber>	Original Part Number of EPC
11	<EpcSerialNumber></EpcSerialNumber>	Serial Number of EPC
12	<BirthRecord></BirthRecord>	Payload in Birth Record
13	<CurrentDataRecord></CurrentDataRecord>	Payload in Current Data Record
14	<LifecycleRecord></LifecycleRecord>	Payload in Lifecycle Record
15	<Result></Result>	Result (Success or Failed)
16	</RFIDTag>	
17	</DataEncoder>	

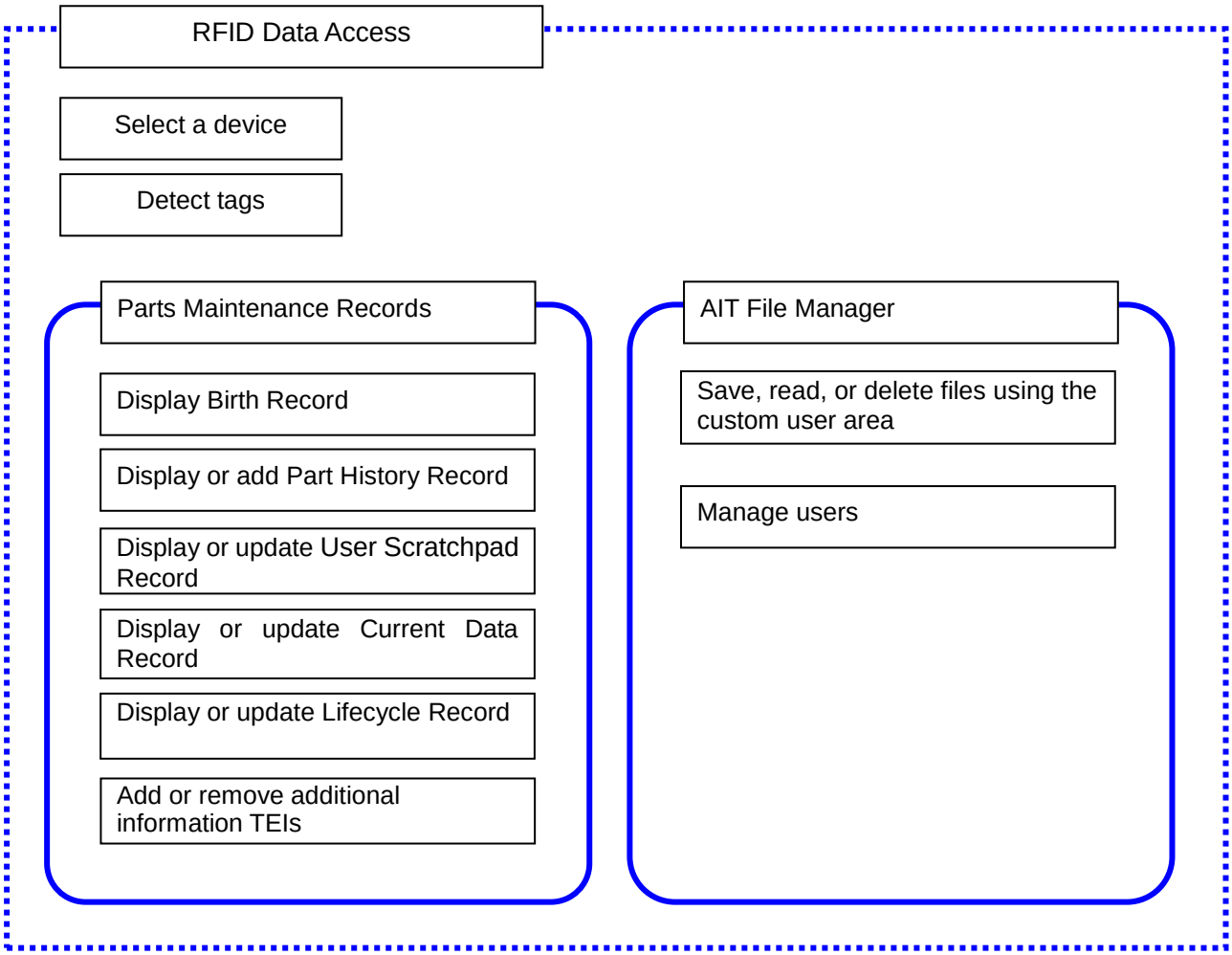
4 RFID Data Access

4.1 Overview

This application can read and write ATA records from/to RFID tags that have been initialized according an ATA format as defined in ATA Spec2000 Chapter 9-5.

4.2 Functions

This application includes the following functions.



4.3 Function Overview

This section provides an overview of the functions of this application.

● Parts Maintenance Records

This application reads and writes data using a record format that is compliant with ATA Spec2000 Chapter 9-5.

● AIT File Manager

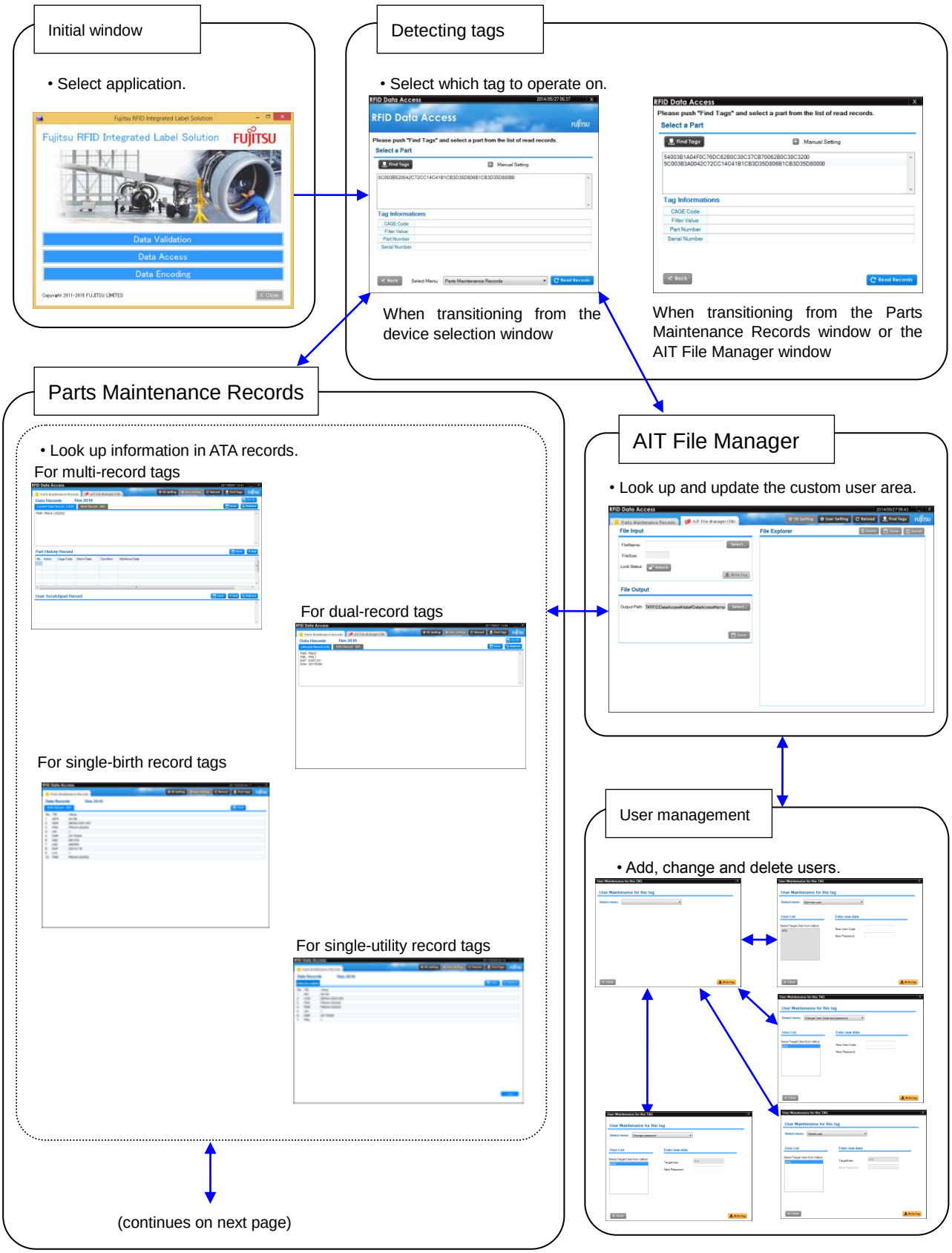
The AIT File Manager provides functions for reading and writing files from and to the custom user area that have been set up by the AIT-tag Commission tool, and for displaying a list of these files.

! Caution

- When reading or writing from/to tags, always ensure that the tags is in a detectable state.

4.4 Screen Transitions

The following diagram illustrates the screen transitions of this application.

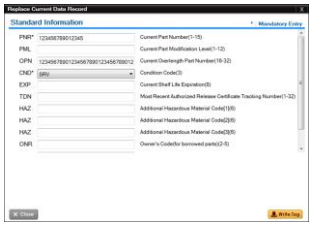


Parts Maintenance Records

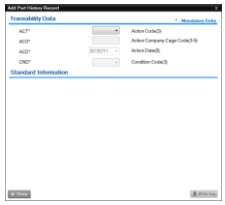
(Continued from previous page)

• Update information in ATA records.

Current Data Record update window



Part History Record input window

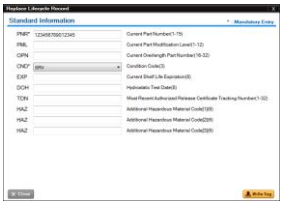


User Scratchpad Record update window

Add

Replace

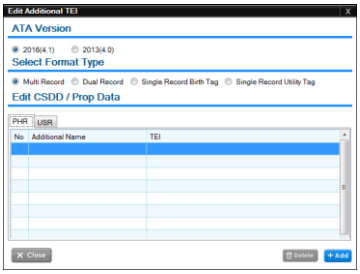
Lifecycle Record update window



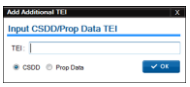
Single utility Record replace and lock window

• Add or remove additional information TEIs.

Additional information TEI editing window



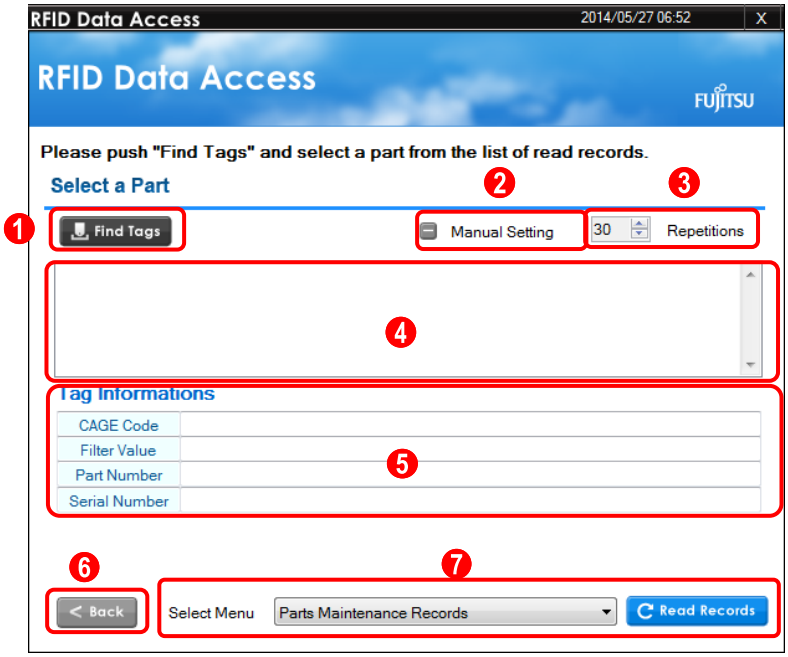
Additional information TEI addition window



4.5 Detect Tags (“Select a Part”)

When an R/W device looks for tags, sometimes multiple tags are discovered, typically tags nearby the reader.

Use this function to display a list of the EPCs of the tags that have been discovered, and select which tag to operate on.



❶ **Find Tags** button **/ Cancel Detection** button

Either the **Find Tags** button or the **Cancel Detection** button will be displayed, depending on what is happening.

- **Find Tags** button

  This button starts tag detection. While tags are being detected, an icon is displayed next to the button.

  When tag detection starts, the **Find Tags** button will disappear, and the **Cancel Detection** button will be displayed.

  Other operations can be performed while tags are being detected.

- **Cancel Detection** button

  This button is displayed while tags are being detected. This button stops tag detection.

  When tag detection is canceled, the **Cancel Detection** button will disappear, and the **Find Tags** button will be displayed.

❷ **Manual Setting** button

Clicking the icon on the left of **Manual Setting** switches to the icon and displays the **repetitions** number wheel for specifying the number of times to detect tags.

If the icon is clicked, the **repetitions** number wheel will disappear.

❸ **Repetitions** number wheel

Tag detection will be repeated for the specified number of repetitions.
The number wheel can be used to change the number of repetitions.
Values can be specified in the range from 1 to 500. The initial value is 30.
The number wheel appears or disappears each time the **Manual Setting** button is clicked.

❹ EPC list box

This list box displays the EPC codes for all the tags that have been detected.

❺ Tag information display area

This area displays the information (CAGE Code, Filter Value, Part Number, and Serial Number) for the tag that has been selected in the EPC list box. “Unknown” is displayed if no information can be obtained from the tag (which will be the case for a non-ATA formatted tag).

❻ **Back** button

This button is used to close the current window and return to the device selection window.

❼ **Select menu** pull-down menu and **Read Records** button

The **Select menu** pull-down menu is used to specify whether to execute the **Parts Maintenance Records** function or the **AIT File Manager** function for the selected tag.
After selecting a menu option, click the **Read Records** button to proceed with the next processing.

♦ **Reference:**

- Tag detection terminates when either the **Cancel Detection** button or the **Read Records** button is clicked, or when tag detection has been repeated for the specified number of times.
- Once a tag has been detected, its EPC is displayed until the **Find Tags** button is clicked again.
- If an EPC is selected from the EPC list box and the **Read Records** button is then clicked, the menu option selected in the **Select menu** pull-down menu will be executed.

■Operating procedure

(1) Click the **Find Tags** button.
(2) The EPCs for the tags that have been detected will be displayed in the EPC list box.
If multiple tags have been detected, multiple EPC codes are displayed in the EPC list box.

4.5.1 Detect and Display Tags

When tag detection starts, an icon is displayed to indicate that detection is underway, and EPCs are displayed in the order that tags are detected.

When a tag EPC is selected from the EPC list box, tag information is displayed in the tag information display area.

♦ **Reference:**

- "Unknown" is displayed in the tag information display area if no information can be obtained from the tag.
- Depending on the information that has been set on the tag, nothing may be displayed or a meaningless string may be displayed.

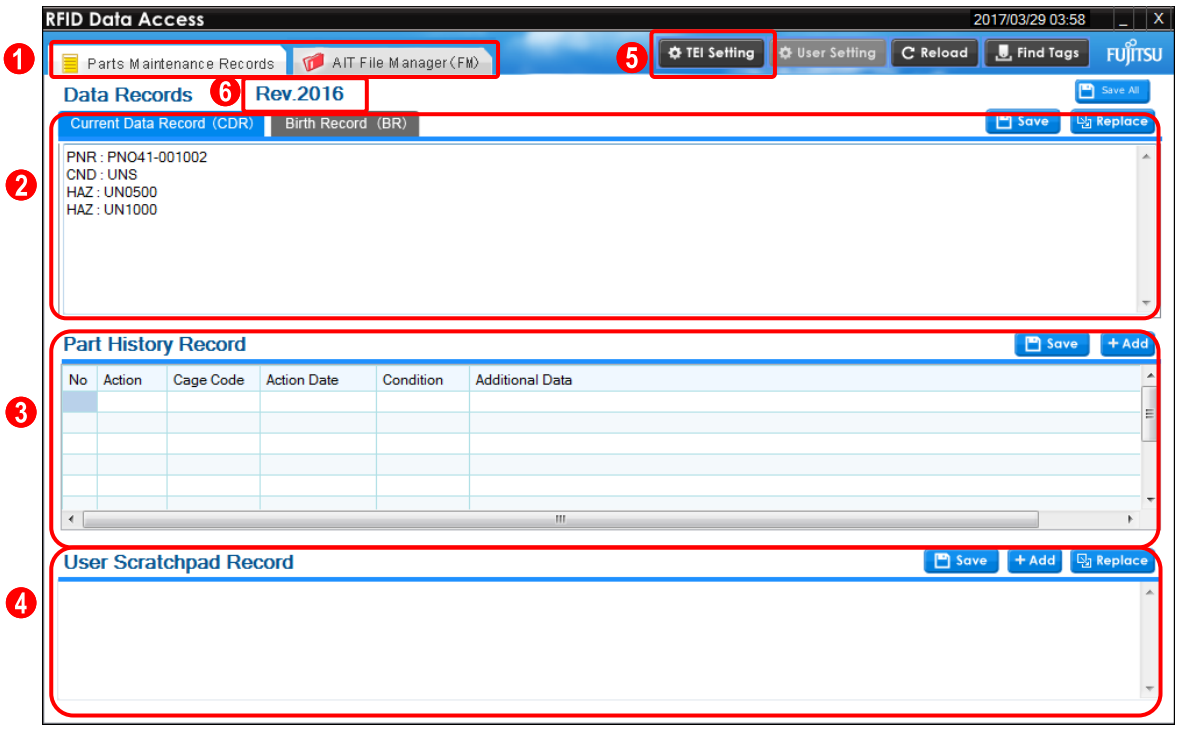
■Operating procedure

(1) Click on the EPC for the tag to be operated on, and information from the selected tag will be displayed.

(2) Select either **Parts Maintenance Records** or **File Manager** from the **Select menu** pull-down menu, and then click the **Read Records** button. The window corresponding to the selected option (**Parts Maintenance Records** or **File Manager**) will be displayed.

4.6 Parts Maintenance Records (Multi-Record)

If a multi-record tag is selected in the **Select a Part** window (tag detection window), **Parts Maintenance Records** is selected from the **Select menu** pull-down menu and then the **Read Records** button is clicked, all of the ATA records for the specified tag will be read and displayed.



1. Function switch tabs

   These tabs are used to switch between the “Parts Maintenance Records” function and the “AIT File Manager” function.

2. Current Data Record/Birth Record display area

   This area displays the Current Data Record and the Birth Record. The tabs at the top left of the area can be used to switch which record type is displayed.

3. Part History Record display area

   This area displays the Part History Records for the selected tag as a list.

4. User Scratchpad Record display area

   This area displays User Scratchpad Record data.

5. **TEI Setting** button

   This button is used to display the additional information TEI editing screen.

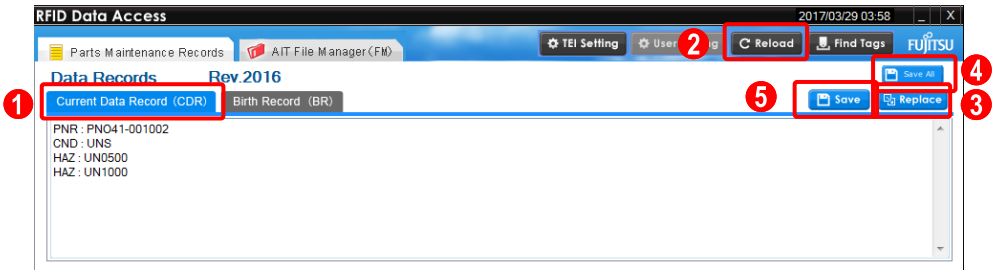
   The additional information TEI editing window can be used to add and delete both TEIs that have been defined in CSDD and TEIs that have been specifically defined by the user.

❻ ATA version display area

This area displays the version of ATA Spec2000.

- “Rev.2016”: ATA Spec 2000 Rev.2016
- “Rev.2013”: ATA Spec 2000 Rev.2013

4.6.1 Read and Write the Current Data Record



1 Current Data Record (CDR) tab

This tab displays the Current Data Record.

2 Reload button

This button reloads data from the tag that is currently selected.

Use this button to reload from the tag in cases such as when an error occurs while data is being read.

3 Replace button

This button is displayed when the **Current Data Record** tab is selected.

Clicking this button displays the Current Data Record update window.

4 Save all button

This button is used to save the whole ATA Memory data of currently selected tag into a file.

- File name: MR-ALL -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Read

5 Save button

This button is used to save the “Current Data Record” data of currently selected tag into a file.

- File name: MR-CDR -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Read

4.6.1.1 XML Format of “Read Data”

No	XML tag	Data
1	<DataAccess>	
2	<TimeStamp></TimeStamp>	Timestamp (yyyy/MM/dd H:m:s)
3	<Action></Action>	“Read”
4	<Version></Version>	4.1 (Rev.2016) or 4.0 (Rev. 2013)
5	<TID></TID>	TID value
6	<Epc></Epc>	EPC value
7	<EpcHeader></EpcHeader>	EPC Header value
8	<EpcFilterValue></EpcFilterValue>	Filter Value
9	<EpcManagerNumber></EpcManagerNumber>	Manager Number of EPC
10	<EpcOriginalPartNumber></EpcOriginalPartNumber>	Original Part Number of EPC
11	<EpcSerialNumber></EpcSerialNumber>	Serial Number of EPC
12	<BirthRecord></BirthRecord>	Payload in Birth Record
13	<CurrentDataRecord></CurrentDataRecord>	Payload in Current Data Record
14	<UserScratchpadRecord></UserScratchpadRecord>	Payload in User Scratchpad Record
15	<PartHistoryRecord></PartHistoryRecord>	Payload in Part History Record
16	<LifecycleRecord></LifecycleRecord>	Payload in Lifecycle Record
17	<UtilityRecord></UtilityRecord>	Payload in Utility Record
18	<Result></Result>	Result (Success or Failed)
19	</DataAccess>	

4.6.1.2 Read the Current Data Record

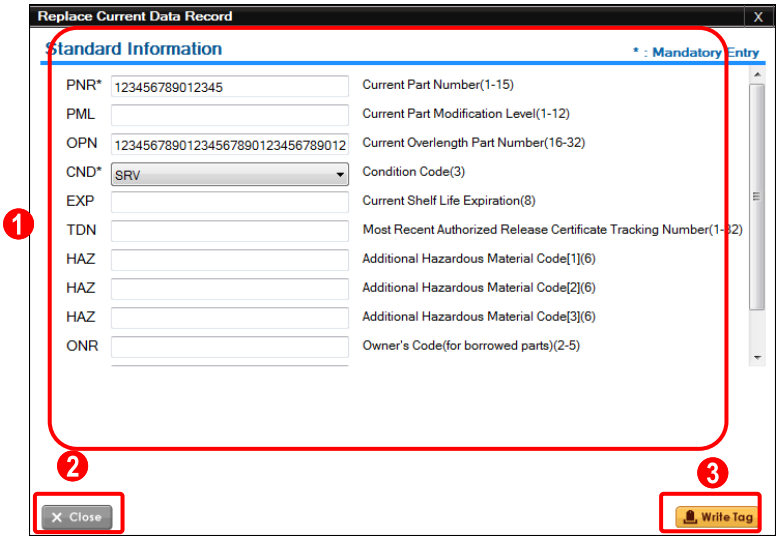
Selecting the **Current Data Record (CDR)** tab automatically reads and displays the Current Data Record.

■Operating procedure

(1) Click the **Current Data Record (CDR)** tab to display the Current Data Record.

4.6.1.3 Write the Current Data Record

Clicking the **Replace** button in the **Current Data Record (CDR)** tab displays the Current Data Record input window. Current Data Record data can be entered and written to the tag.



1 Standard Information

- **PNR**: This field is used to specify the Current Part Number.
- **PML**: This field is used to specify the Current Part Modification Level.
- **OPN**: This field is used to specify the Current Overlength Part Number.
- **CND**: This drop-down menu is used to select a Condition Code.
- **EXP**: This field is used to specify the Current Shelf Life Expiration.
- **TDN**: This field is used to specify the Most Recent Authorized Release Certificate Tracking Number.
- **HAZ**: This field is used to specify the Additional Hazardous Material Code.
- **ONR**: This field is used to specify the Owner's Code (for borrowed parts).
- **LAC**: This field is used to specify the Location On Aircraft.
- **ASN**: This field is used to specify the Airline Stock Number.

2 Close button

This button closes the Current Data Record input window.

3 Write Tag button

This button writes the Current Data Record that has been entered to the tag.

When the “Write Tag” button is clicked, the written data to tags is recorded in the XML file as below.

- File name: MR-CDR -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Write

♦ **Reference:**
- The asterisk (“*”) to the right of the TEI code for some data input fields indicates that the item is a mandatory input item.
- To the right of each item is an explanation of the content to be entered and the number of characters that can be entered.
  For example, “1-5” means that 1 to 5 digits can be entered.

■Operating procedure

(1) Click the **Replace** button.
(2) Enter parameters in the TEI parameter input fields.
(3) Click the **Write Tag** button, and the Current Data Record that has been entered will be written to the tag.

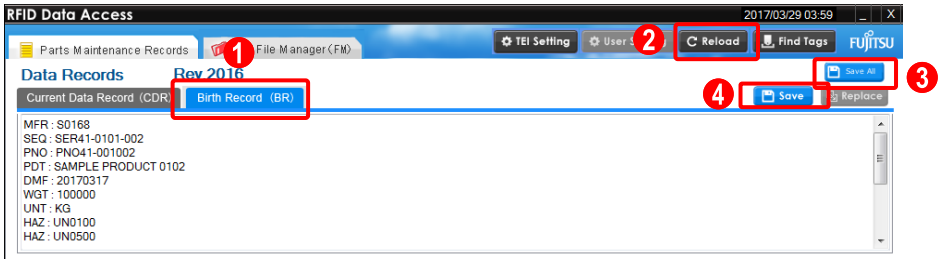
♦ **Reference**
- To cancel the Current Data Record data that has been entered, click either the **Close** button or the **[x]** button at the top right of the screen.

4.6.1.4 XML Format of “Write Data”

No	XML tag	Data
1	<DataAccess>	
2	<TimeStamp></TimeStamp>	Timestamp (yyyy/MM/dd H:m:s)
3	<Action></Action>	“Write”
4	<Version></Version>	4.1 (Rev.2016) or 4.0 (Rev. 2013)
5	<TID></TID>	TID value
6	<Epc></Epc>	EPC value
7	<EpcHeader></EpcHeader>	EPC Header value
8	<EpcFilterValue></EpcFilterValue>	Filter Value
9	<EpcManagerNumber></EpcManagerNumber>	Manager Number of EPC
10	<EpcOriginalPartNumber></EpcOriginalPartNumber>	Original Part Number of EPC
11	<EpcSerialNumber></EpcSerialNumber>	Serial Number of EPC
12	<BirthRecord></BirthRecord>	Payload in Birth Record
13	<CurrentDataRecord></CurrentDataRecord>	Payload in Current Data Record
14	<UserScratchpadRecord></UserScratchpadRecord>	Payload in User Scratchpad Record
15	<PartHistoryRecord></PartHistoryRecord>	Payload in Part History Record
16	<LifecycleRecord></LifecycleRecord>	Payload in Lifecycle Record
17	<UtilityRecord></UtilityRecord>	Payload in Utility Record
18	<Result></Result>	Result (Success or Failed)
19	</DataAccess>	

4.6.2 Read the Birth Record

Selecting the **Birth Record** tab displays the Birth Record.



1 **Birth Record (BR)** tab

This tab displays the Birth Record.

2 **Reload** button

This button reloads data from the tag that is currently selected.

Use this button to reload from the tag in cases such as when an error occurs while data is being read.

3 **Save all** button

This button is used to save the whole ATA Memory data of the currently selected tag into a file.

- File name: MR-ALL -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Read

4 **Save** button

This button is used to save the “Birth Record” data of currently selected tag into a file.

- File name: MR-BR -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Read

4.6.2.1 XML Format of “Read Data”

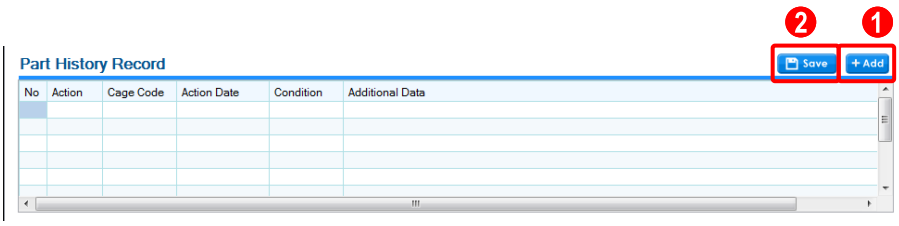
No	XML tag	Data
1	<DataAccess>	
2	<TimeStamp></TimeStamp>	Timestamp (yyyy/MM/dd H:m:s)
3	<Action></Action>	“Read”
4	<Version></Version>	4.1 (Rev.2016) or 4.0 (Rev. 2013)
5	<TID></TID>	TID value
6	<Epc></Epc>	EPC value
7	<EpcHeader></EpcHeader>	EPC Header value
8	<EpcFilterValue></EpcFilterValue>	Filter Value

No	XML tag	Data
9	<EpcManagerNumber></EpcManagerNumber>	Manager Number of EPC
10	<EpcOriginalPartNumber></EpcOriginalPartNumber>	Original Part Number of EPC
11	<EpcSerialNumber></EpcSerialNumber>	Serial Number of EPC
12	<BirthRecord></BirthRecord>	Payload in Birth Record
13	<CurrentDataRecord></CurrentDataRecord>	Payload in Current Data Record
14	<UserScratchpadRecord></UserScratchpadRecord>	Payload in User Scratchpad Record
15	<PartHistoryRecord></PartHistoryRecord>	Payload in Part History Record
16	<LifecycleRecord></LifecycleRecord>	Payload in Lifecycle Record
17	<UtilityRecord></UtilityRecord>	Payload in Utility Record
18	<Result></Result>	Result (Success or Failed)
19	</DataAccess>	

■Operating procedure

(1) Click the **Birth Record (BR)** tab to display the Birth Record.

4.6.3 Read and Write the Part History Record



❶ **+Add** button

This button displays the Part History Record input window.

❷ **Save** button

This button is used to save the “Part History Record” data of currently selected tag into a file.

- File name: MR-PHR -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Read

4.6.3.1 Read the Part History Record

The Part History Records are automatically read and displayed.

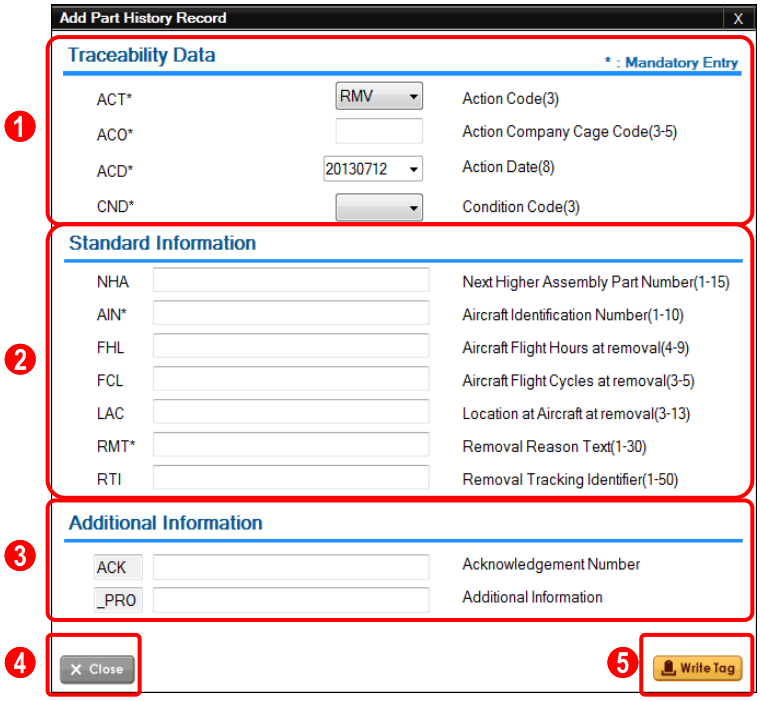
When there are more Part History Records than can fit in the display area, use the scroll bar to display the remaining items.

4.6.3.2 Writing the Part History Records

Clicking the **+Add** button in the **Part History** display area opens the Part History Record input window (when the record type is “Standard”).

Part History Record information can be entered and written to the tag.

If RMV has been selected from the ACT pull-down menu



1 Traceability Data

- **ACT**: This pull-down menu is used to select the Action Code.
- **ACO**: This field is used to specify the Action Company Cage Code.
- **ACD**: This pull-down menu is used to specify the Action Date.
- **CND**: This pull-down menu is used to specify the Condition Code.

2 Standard Information

Input areas for the TEIs corresponding to the value selected for **ACT** will be displayed. Specify the value for each TEI.

3 Additional Information

These fields are displayed when additional information TEIs have been defined.

These fields are used to specify additional information TEIs.

4 Close button

This button closes the Part History Record input window.

❺ **Write Tag** button

This button is used to write to the tag the Part History Record that has been entered.

When the “Write Tag” button is clicked, the written data to tags is recorded in the XML file as below.

- File name: MR-PHR -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Write

♦ **Reference:**

- The asterisk (“*”) to the right of the TEI code for some data input fields indicates that the item is a mandatory item.
- To the right of each item is an explanation of the content to be entered and the number of characters that can be entered. For example, “1-5” means that 1 to 5 characters can be entered.

If the Part History Record contains a TEI that needs to be updated with the Current Data Record, the Current Data Record will be updated at the same time.

The following table shows which TEI in the Part History Record triggers an automatic update of the Current Data Record.

TEIs included in Part History Records	TEIs to be updated in the Current Data Record
CND	CND
LAC (ACT=INS)	LAC
LAC (ACT=RMV)	LAC (no value set)
EXP (ACT=OVH)	EXP
PNR (ACT=MOD)	PNR
PML (ACT=MOD)	PML

■Operating procedure

(1) Click the **+Add** button to open the Part History Record input window.

(2) Select an Action Code from the pull-down menu, and the necessary TEIs will be displayed automatically according to the selected Action Code.

(3) Enter an Action Company CAGE Code.

(4) Select an Action Date.

(5) For the Condition Code, select a value from the **CND** pull-down menu.

(6) Enter a value for each TEI as required.

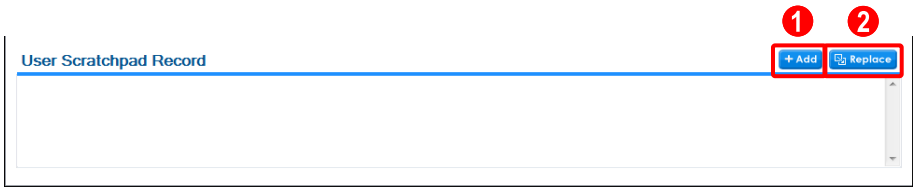
(7) Click the **Write Tag** button to write the Party History Record that has been entered to the tag.

♦ **Reference** • To cancel the data that has been entered, click either the **Close** button or the **[x]** button at the top right of the window.

4.6.3.3 XML Format of “Read Data” and “Write Data”

No	XML tag	Data
1	<DataAccess>	
2	<TimeStamp></TimeStamp>	Timestamp (yyyy/MM/dd H:m:s)
3	<Action></Action>	“Read” or “Write”
4	<Version></Version>	4.1 (Rev.2016) or 4.0 (Rev. 2013)
5	<TID></TID>	TID value
6	<Epc></Epc>	EPC value
7	<EpcHeader></EpcHeader>	EPC Header value
8	<EpcFilterValue></EpcFilterValue>	Filter Value
9	<EpcManagerNumber></EpcManagerNumber>	Manager Number of EPC
10	<EpcOriginalPartNumber></EpcOriginalPartNumber>	Original Part Number of EPC
11	<EpcSerialNumber></EpcSerialNumber>	Serial Number of EPC
12	<BirthRecord></BirthRecord>	Payload in Birth Record
13	<CurrentDataRecord></CurrentDataRecord>	Payload in Current Data Record
14	<UserScratchpadRecord></UserScratchpadRecord>	Payload in User Scratchpad Record
15	<PartHistoryRecord></PartHistoryRecord>	Payload in Part History Record
16	<LifecycleRecord></LifecycleRecord>	Payload in Lifecycle Record
17	<UtilityRecord></UtilityRecord>	Payload in Utility Record
18	<Result></Result>	Result (Success or Failed)
19	</DataAccess>	

4.6.4 Read and Write the User Scratchpad Record



1 **+Add** button

This button displays the User Scratchpad Record input window.

The content that has been entered in this window will be appended to the existing User Scratchpad Record.

2 **Replace** button

This button displays the User Scratchpad Record input window.

The User Scratchpad Record will be replaced by the content that has been entered in this window.

4.6.4.1 Read the User Scratchpad Record

The User Scratchpad Record is automatically read and displayed.

4.6.4.2 Write the User Scratchpad Record

If the **+Add** button or the **Replace** button in the User Scratchpad Record display area is clicked, the User Scratchpad Record input window will be displayed.

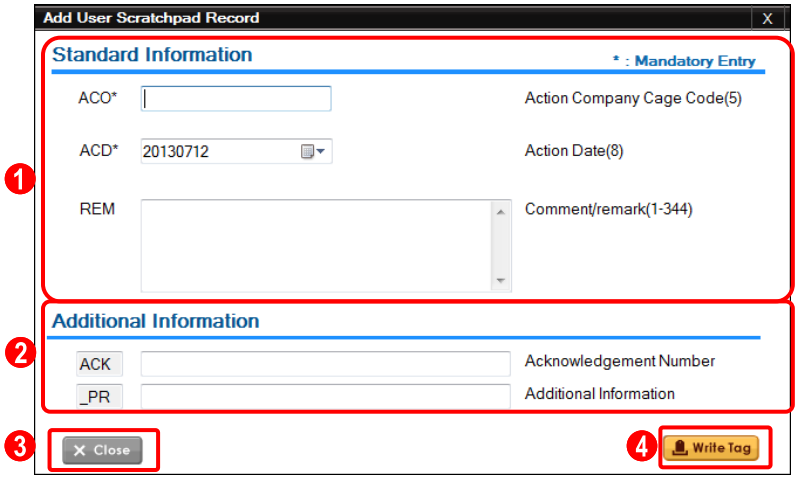
If the **+Add** button is clicked, the content that has been entered in this window will be appended to the existing User Scratchpad Record.
Using the +**Add** button writes data to the User Scratchpad Record using the following format.

For example, if the previously entered data (ACO SC878*ACD 20130712* REM TEST01) is displayed in the User Scratchpad Record display area, then specifying “ACO= KA387, ACD=20130713, REM= TEST02” and using the +**Add** button will produce “ACO SC878*ACD 20130712* REM TEST01* ACO KA387*ACD 20130713* REM TEST02” as User Scratchpad Record data.

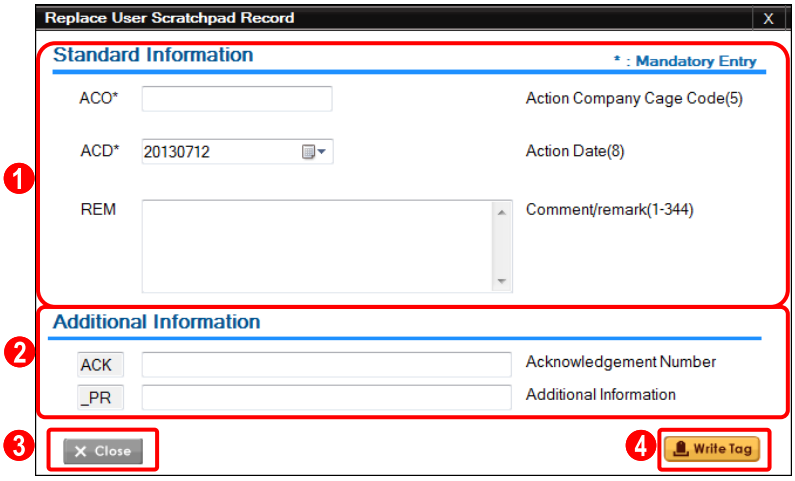
If there is not enough space in the User Scratchpad Record area when data is added to the User Scratchpad Record, space will be secured by deleting as many older records as needed starting with the oldest, and then the new data will be added.

If the **Replace** button is clicked, the content of the User Scratchpad Record will be replaced with the content that has been entered in this window.

When the **+Add** button is clicked



When the Replace button is clicked



1 Standard Information

- **ACO**: This field is used to specify the Action Company Cage Code.
- **ACD**: This field is used to specify the Action Date.
- **REM**: This field is used to enter comments or remarks.

Note: Linefeed characters are replaced by spaces when the **Write Tag** button is clicked.

2 Additianal Information

These fields are displayed when additional information TEIs have been defined.

These fields are used to specify additional information TEIs.

❸ **Close** button

This button closes the User Scratchpad Record input window.

❹ **Write Tag** button

This button writes the User Scratchpad Record that has been entered to the tag.

When the “Write Tag” button is clicked, the written data to tags is recorded in the XML file as below.

- File name: MR-USR -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Write

♦ **Reference:**

- The asterisk (“*”) to the right of the TEI code for some data input fields indicates that the item is a mandatory input item.
- To the right of each item is an explanation of the content to be entered and the number of characters that can be entered.
  For example, “1-5” means that 1 to 5 characters can be entered.

■Operating procedure

(1) Click the **+Add** button or the **Replace** button to open the User Scratchpad Record input window.
(2) Enter an Action Company CAGE Code.
(3) Select an Action Date.
(4) Enter a comment or remark.
(5) Click the **Write Tag** button, and the User Scratchpad Record that has been entered will be written to the tag.

♦ **Reference**

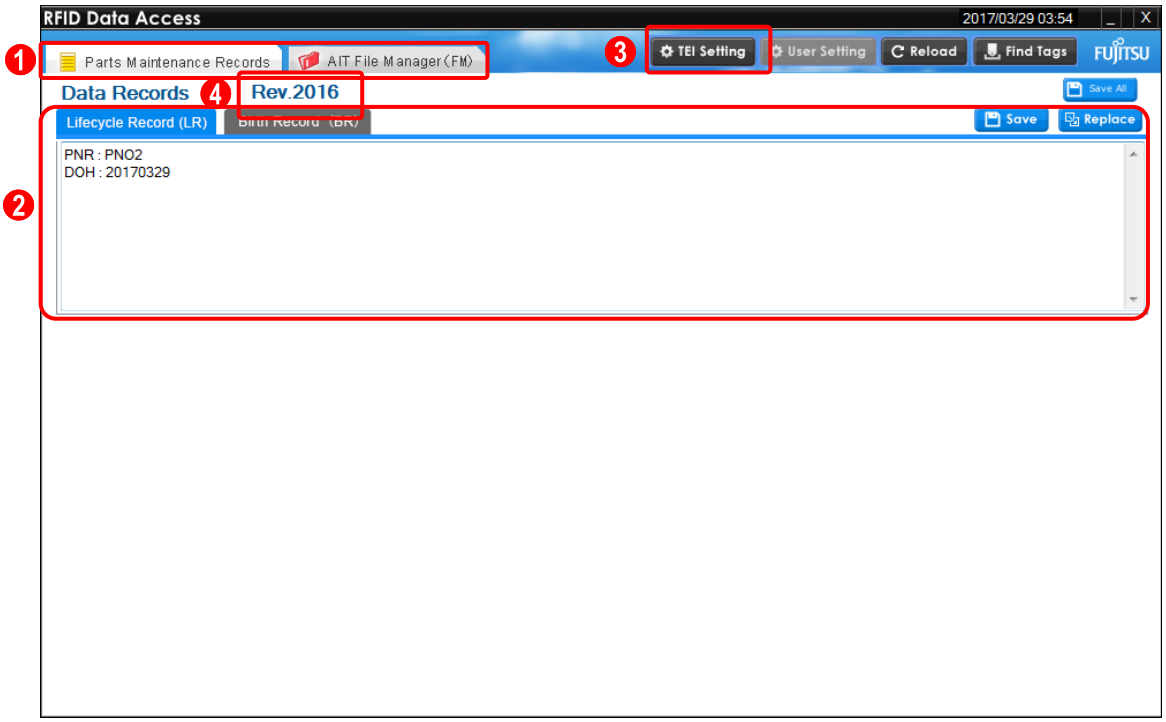
- To cancel the data that has been entered, click either the **Close** button or the **[x]** button at the top right of the window.

4.6.4.3 XML Format of “Read Data” and “Write Data”

No	XML tag	Data
1	<DataAccess>	
2	<TimeStamp></TimeStamp>	Timestamp (yyyy/MM/dd H:m:s)
3	<Action></Action>	“Read” or “Write”
4	<Version></Version>	4.1 (Rev.2016) or 4.0 (Rev. 2013)
5	<TID></TID>	TID value
6	<Epc></Epc>	EPC value
7	<EpcHeader></EpcHeader>	EPC Header value
8	<EpcFilterValue></EpcFilterValue>	Filter Value
9	<EpcManagerNumber></EpcManagerNumber>	Manager Number of EPC
10	<EpcOriginalPartNumber></EpcOriginalPartNumber>	Original Part Number of EPC
11	<EpcSerialNumber></EpcSerialNumber>	Serial Number of EPC
12	<BirthRecord></BirthRecord>	Payload in Birth Record
13	<CurrentDataRecord></CurrentDataRecord>	Payload in Current Data Record
14	<UserScratchpadRecord></UserScratchpadRecord>	Payload in User Scratchpad Record
15	<PartHistoryRecord></PartHistoryRecord>	Payload in Part History Record
16	<LifecycleRecord></LifecycleRecord>	Payload in Lifecycle Record
17	<UtilityRecord></UtilityRecord>	Payload in Utility Record
18	<Result></Result>	Result (Success or Failed)
19	</DataAccess>	

4.7 Parts Maintenance Records (Dual-Record)

If a dual-record tag is selected in the tag detection window, Parts Maintenance Records is selected and then the Read Records button is clicked, all of the ATA records on the specified tag will be read and displayed.



1 Function switch tabs

These tabs are used to switch between the “Parts Maintenance Records” function and the “AIT File Manager” function.

2 Lifecycle Record/Birth Record display area

This area displays the Lifecycle Record or the Birth Record.

The tabs at the top left of the area can be used to switch which record is displayed.

3 **TEI Setting** button

This button is used to display the additional information TEI editing window.

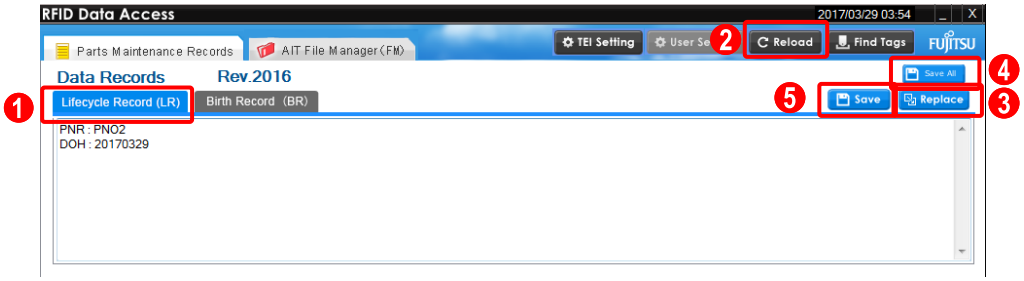
The additional information TEI editing window can be used to add and delete both TEIs that have been defined in CSDD and TEIs that have been specifically defined by the user.

4 ATA version display area

This area displays the version of ATA Spec2000.

- “Rev.2016”: ATA Spec 2000 Rev.2016
- “Rev.2013”: ATA Spec 2000 Rev.2013

4.7.1 Read and Write the Lifecycle Record



1 Lifecycle Record (LR) tab

This tab displays the Lifecycle Record.

2 Reload button

This button rescans the tag that is currently selected.

Use this button to rescan the tag in cases such as when an error occurs while data is being read.

3 Replace button

This button is displayed when the **Lifecycle Record** tab is selected.

Clicking this button displays the Lifecycle Record update window.

4 Save all button

This button is used to save the whole ATA Memory data of currently selected tag into a file.

- File name: DR-ALL -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Read

5 Save button

This button is used to save the “Lifecycle Record” data of currently selected tag into a file.

- File name: DR-LR -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Read

4.7.1.1 Read the Lifecycle Record

When the **Lifecycle Record (LR)** tab is selected, the Lifecycle Record will be automatically read and displayed.

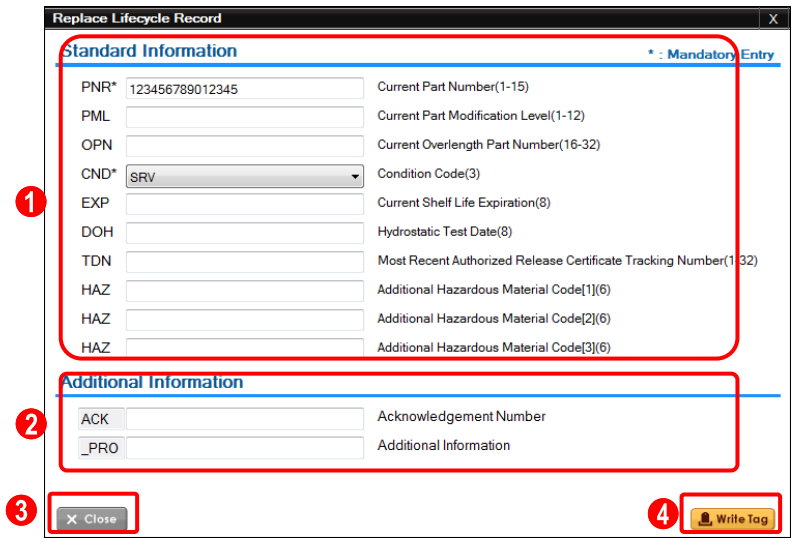
■ Operating procedure

(1) Select the **Lifecycle Record (LR)** tab to display the Lifecycle Record.

4.7.1.2 Write the Lifecycle Record

Clicking the **Replace** button in the **Lifecycle Record (LR)** tab displays the Lifecycle Record input window.

Lifecycle Record data can be entered and written to the tag.



1 Standard Information

- **PNR**: This field is used to specify the Current Part Number.
- **PML**: This field is used to specify the Current Part Modification Level.
- **OPN**: This field is used to specify the Current Overlength Part Number.
- **CND**: This drop-down menu is used to select a Condition Code.
- **EXP**: This field is used to specify the Current Shelf Life Expiration.
- **DOH**: This field is used to specify the Hydrostatic Test Data.
- **TDN**: This field is used to specify the Most Recent Authorized Release Certificate Tracking Number.
- **HAZ**: This field is used to specify the Additional Hazardous Material Code.

2 Additional Information

These fields are displayed when additional information TEIs have been defined.

These fields are used to specify additional information TEIs.

3 Close button

This button closes the Lifecycle Record input window.

❹ **Write Tag** button

This button writes the Lifecycle Record that has been entered to the tag.

When the “Write Tag” button is clicked, the written data to tags is recorded in the XML file as below.

- File name: DR-LR -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Write

! Caution	• The characters that can be entered are the 6-bit characters defined in table A13-2, “ASCII Conversion Chart” in Appendix 13, “6 Bit ASCII Encoding" of *ATA Spec2000.*

♦ Reference	• The asterisk (“*”) to the right of the TEI code for some data input fields indicates that the item is a mandatory input item. • To the right of each item an explanation of the TEI is displayed, along with the maximum number of characters that can be entered. For example, “1-5” means that 1 to 5 characters can be entered.

■ Operating procedure

(1) Click the **Replace** button.

(2) Enter parameters in the TEI parameter input field

(3) Click the **Write Tag** button to write the Lifecycle Record that has been entered to the tag.

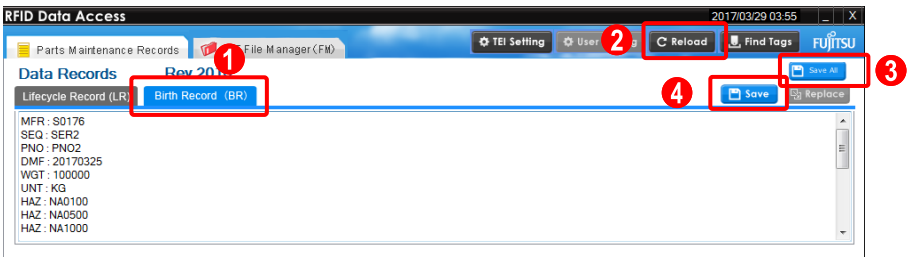
♦ Reference	• To cancel the Lifecycle Record that has been entered, click the [**x**] button at the top right of the window or the **Close** button.

4.7.1.3 XML Format of “Read Data” and “Write Data”

No	XML tag	Data
1	<DataAccess>	
2	<TimeStamp></TimeStamp>	Timestamp (yyyy/MM/dd H:m:s)
3	<Action></Action>	“Read” or “Write”
4	<Version></Version>	4.1 (Rev.2016) or 4.0 (Rev. 2013)
5	<TID></TID>	TID value
6	<Epc></Epc>	EPC value
7	<EpcHeader></EpcHeader>	EPC Header value
8	<EpcFilterValue></EpcFilterValue>	Filter Value
9	<EpcManagerNumber></EpcManagerNumber>	Manager Number of EPC
10	<EpcOriginalPartNumber></EpcOriginalPartNumber>	Original Part Number of EPC
11	<EpcSerialNumber></EpcSerialNumber>	Serial Number of EPC
12	<BirthRecord></BirthRecord>	Payload in Birth Record
13	<CurrentDataRecord></CurrentDataRecord>	Payload in Current Data Record
14	<UserScratchpadRecord></UserScratchpadRecord>	Payload in User Scratchpad Record
15	<PartHistoryRecord></PartHistoryRecord>	Payload in Part History Record
16	<LifecycleRecord></LifecycleRecord>	Payload in Lifecycle Record
17	<UtilityRecord></UtilityRecord>	Payload in Utility Record
18	<Result></Result>	Result (Success or Failed)
19	</DataAccess>	

4.7.2 Read the Birth Record

Select the **Birth Record** tab to display the Birth Record.



1 Birth Record (BR) tab

This tab displays the Birth Record.

2 Reload button

This button rescans the tag that is currently selected.

Use this button to rescan the tag in cases such as when an error occurs while data is being read.

3 Save all button

This button is used to save the whole ATA Memory data of the currently selected tag into a file.

- File name: DR-ALL -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Read

4 Save button

This button is used to save the “Birth Record” data of currently selected tag into a file.

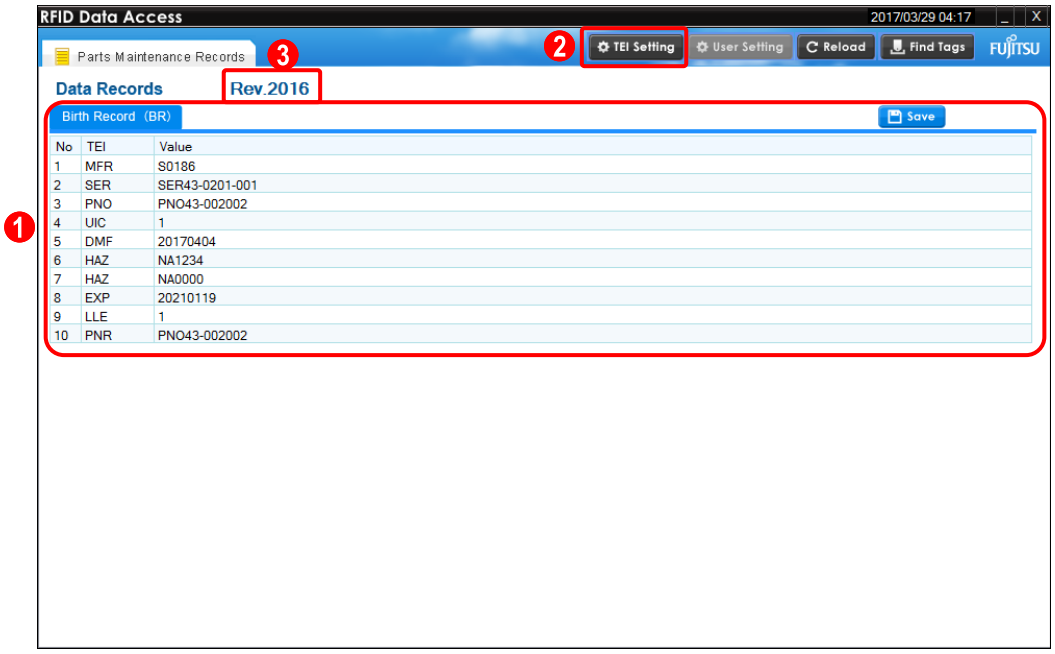
- File name: DR-BR -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Read

■ Operating procedure

(1) Select the **Birth Record (BR)** tab to display the Birth Record.

4.8 Parts Maintenance Records (Single-Birth-Record)

If a single-birth-record tag is selected in the tag detection window and the **Read Records** button is clicked, the ATA record on the specified tag will be read and displayed.



1 Birth Record display area

This area displays the Birth Record.

2 **TEI Setting** button

This button is used to display the additional information TEI editing window.

The additional information TEI editing window can be used to add and delete both TEIs that have been defined in CSDD and TEIs that have been specifically defined by the user.

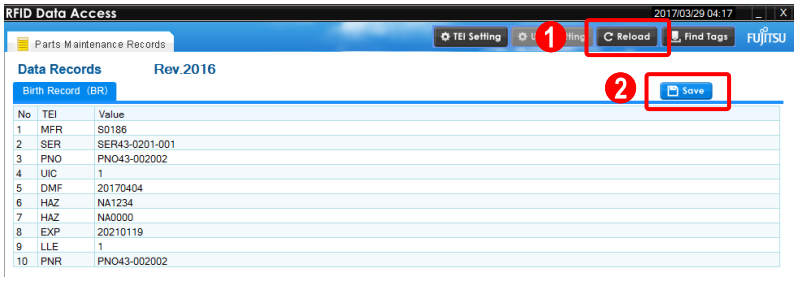
3 ATA version display area

This area displays the version of ATA Spec2000.

- “Rev.2016”: ATA Spec 2000 Rev.2016
- “Rev.2013”: ATA Spec 2000 Rev.2013

4.8.1 Read the Birth Record

This window displays the Birth Record.



1 Reload button

This button rescans the tag that is currently selected.

Use this button to rescan the tag in cases such as when an error occurs while data is being read.

2 Save button

This button is used to save the “Birth Record” data of currently selected tag into a file.

- File name: SB-BR -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Read

■ Operating procedure

(1) Select a single-birth-record tag in the tag detection window and then click the **Read Records** button to display the Birth Record.

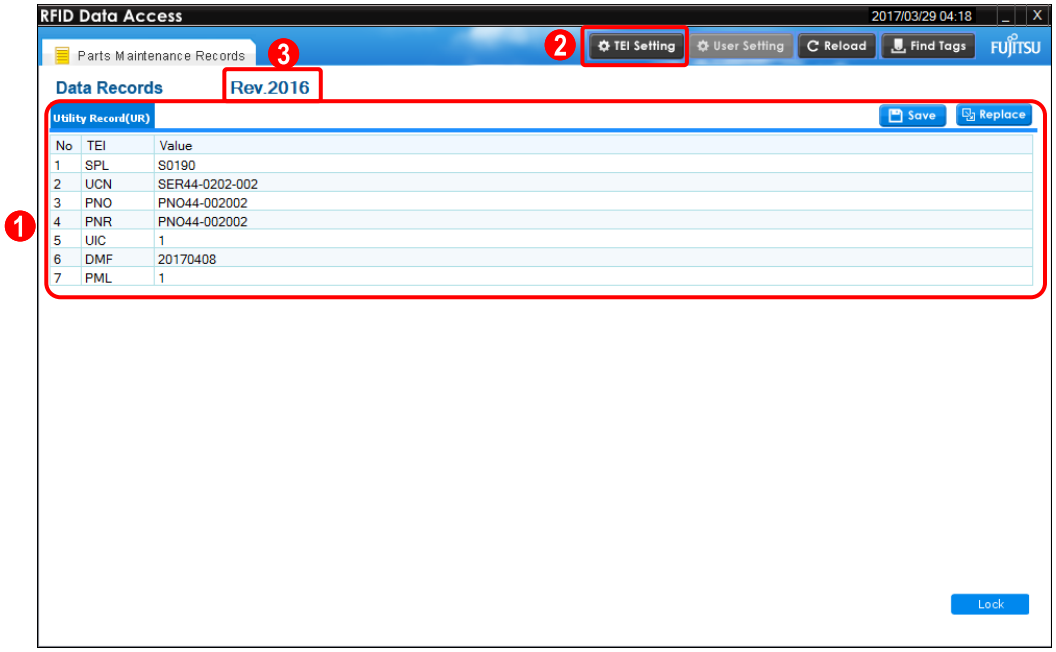
4.8.1.1 XML Format of “Read Data”.

No	XML tag	Data
1	<DataAccess>	
2	<TimeStamp></TimeStamp>	Timestamp (yyyy/MM/dd H:m:s)
3	<Action></Action>	“Read”
4	<Version></Version>	4.1 (Rev.2016) or 4.0 (Rev. 2013)
5	<TID></TID>	TID value
6	<Epc></Epc>	EPC value
7	<EpcHeader></EpcHeader>	EPC Header value
8	<EpcFilterValue></EpcFilterValue>	Filter Value
9	<EpcManagerNumber></EpcManagerNumber>	Manager Number of EPC
10	<EpcOriginalPartNumber></EpcOriginalPartNumber>	Original Part Number of EPC
11	<EpcSerialNumber></EpcSerialNumber>	Serial Number of EPC

No	XML tag	Data
12	<BirthRecord></BirthRecord>	Payload in Birth Record
13	<CurrentDataRecord></CurrentDataRecord>	Payload in Current Data Record
14	<UserScratchpadRecord></UserScratchpadRecord>	Payload in User Scratchpad Record
15	<PartHistoryRecord></PartHistoryRecord>	Payload in Part History Record
16	<LifecycleRecord></LifecycleRecord>	Payload in Lifecycle Record
17	<UtilityRecord></UtilityRecord>	Payload in Utility Record
18	<Result></Result>	Result (Success or Failed)
19	</DataAccess>	

4.9 Parts Maintenance Records (Single-Utility-Record)

If a single-Utility-record tag is selected in the tag detection window and the **Read Records** button is clicked, the ATA record on the specified tag will be read and displayed.



❶ Utility Record display area

This area displays the Birth Record.

❷ **TEI Setting** button

This button is used to display the additional information TEI editing window.

The additional information TEI editing window can be used to add and delete both TEIs that have been defined in CSDD and TEIs that have been specifically defined by the user.

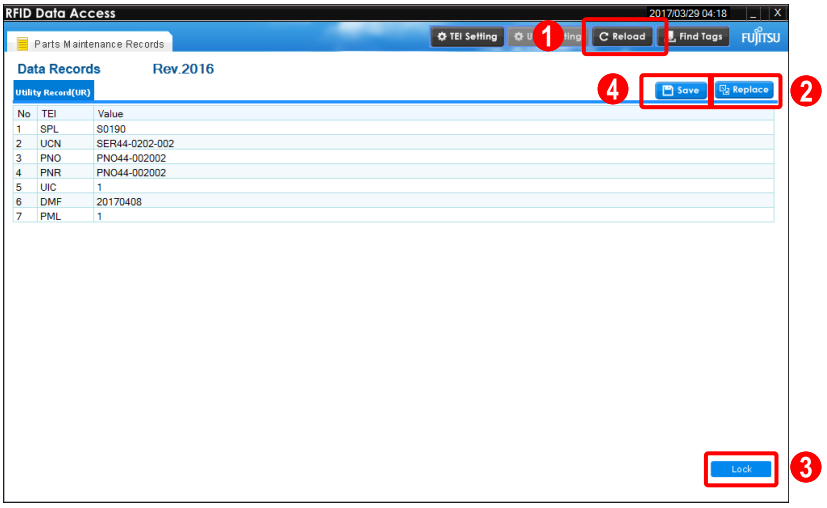
❸ ATA version display area

This area displays the version of ATA Spec2000.

- “Rev.2016”: ATA Spec 2000 Rev.2016
- “Rev.2013”: ATA Spec 2000 Rev.2013

4.9.1 Read the Utility Record

This window displays the Utility Record.



1 Reload button

This button rescans the tag that is currently selected.

Use this button to rescan the tag in cases such as when an error occurs while data is being read.

2 Replace button

This button is displayed when the **Utility Record** tab is selected.

Clicking this button displays the Utility Record update window.

3 Lock button

This button does Utility Record and LOCK is done permanently.

4 Save button

This button is used to save the “Utility Record” data of currently selected tag into a file.

- File name: SB-UR -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Read

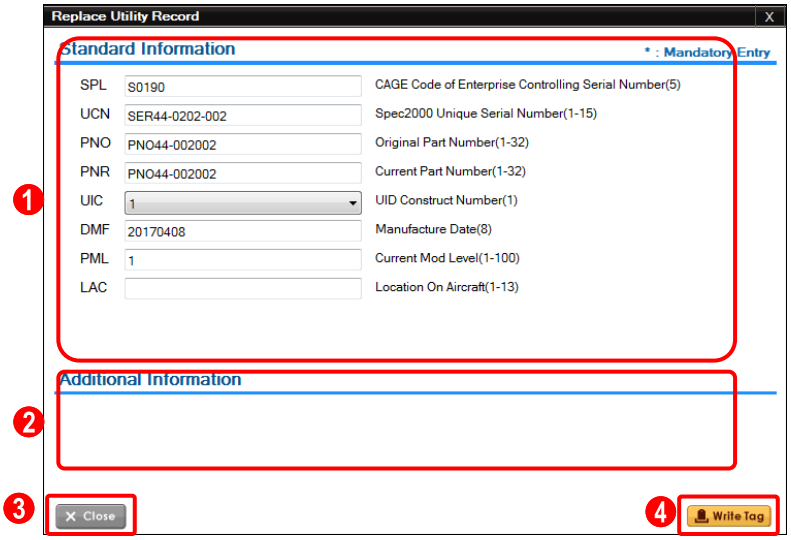
■ Operating procedure

(1) Select a single-Utility-record tag in the tag detection window and then click the **Read Records** button to display the Utility Record.

4.9.1.1 Write the Utility Record

Clicking the **Replace** button in the **Utility Record (UR)** tab displays the Utility Record input window.

Utility Record data can be entered and written to the tag.



1 Standard Information

- **SPL**: This field is used to specify the CAGE Code of Enterprise Controlling Serial Number.
- **UCN**: This field is used to specify the Spec2000 Unique Serial Number.
- **PNO**: This field is used to specify the Original Part Number.
- **PNR**: This field is used to specify the Current Part Number.
- **UIC**: This drop-down menu is used to select a UID Construct Number.
- **DMF**: This field is used to specify the Manufacture Date.
- **PML**: This field is used to specify the Current Mod Level.
- **LAC**: This field is used to specify the Location On Aircraft.

2 Additional Information

These fields are displayed when additional information TEIs have been defined.

These fields are used to specify additional information TEIs.

3 Close button

This button closes the Lifecycle Record input window.

❹ **Write Tag** button

This button writes the Lifecycle Record that has been entered to the tag.

When the “Write Tag” button is clicked, the written data to tags is recorded in the XML file as below.

- File name: SR-UR -IP address- yyyymmddhhmmss.xml
- Folder (by default): C:\Users\Public\RFID Data Management Pro\DataAccess\Write

■ Operating procedure

(1) Click the **Replace** button.

(2) Enter parameters in the TEI parameter input field

(3) Click the **Write Tag** button to write the Lifecycle Record that has been entered to the tag.

4.9.1.2 XML Format of “Read Data” and “Write Data”.

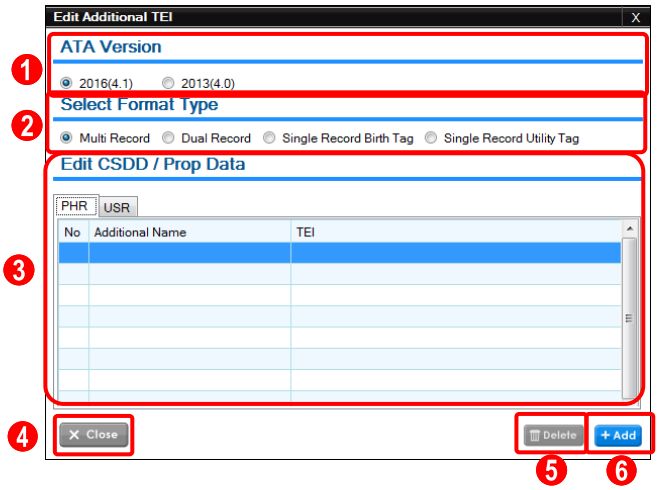
No	XML tag	Data
1	<DataAccess>	
2	<TimeStamp></TimeStamp>	Timestamp (yyyy/MM/dd H:m:s)
3	<Action></Action>	“Read”
4	<Version></Version>	4.1 (Rev.2016) or 4.0 (Rev. 2013)
5	<TID></TID>	TID value
6	<Epc></Epc>	EPC value
7	<EpcHeader></EpcHeader>	EPC Header value
8	<EpcFilterValue></EpcFilterValue>	Filter Value
9	<EpcManagerNumber></EpcManagerNumber>	Manager Number of EPC
10	<EpcOriginalPartNumber></EpcOriginalPartNumber>	Original Part Number of EPC
11	<EpcSerialNumber></EpcSerialNumber>	Serial Number of EPC
12	<BirthRecord></BirthRecord>	Payload in Birth Record
13	<CurrentDataRecord></CurrentDataRecord>	Payload in Current Data Record
14	<UserScratchpadRecord></UserScratchpadRecord>	Payload in User Scratchpad Record
15	<PartHistoryRecord></PartHistoryRecord>	Payload in Part History Record
16	<LifecycleRecord></LifecycleRecord>	Payload in Lifecycle Record
17	<UtilityRecord></UtilityRecord>	Payload in Utility Record
18	<Result></Result>	Result (Success or Failed)
19	</DataAccess>	

4.10 Edit Additional Information TEIs

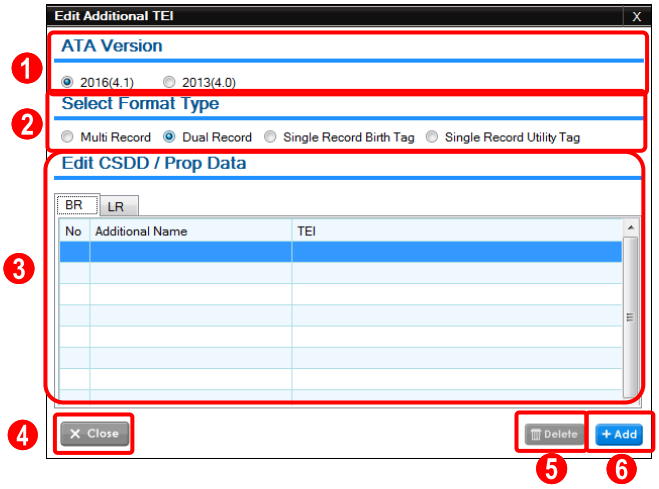
Click the **TEI Setting** button in the **Parts Maintenance Records** window to display the additional information TEI editing window.

Birth Record can be added for Dual Record and Single Record. Additional information TEI added to Birth Record can be used with RFID Data Encoder.

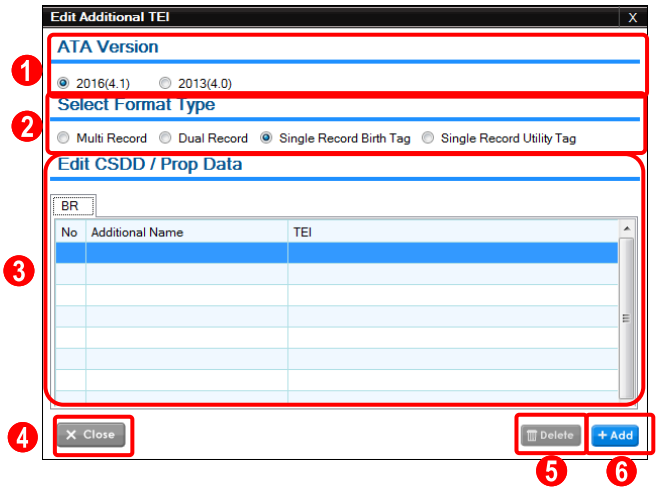
When Multi Record has been selected using the tag type selection button



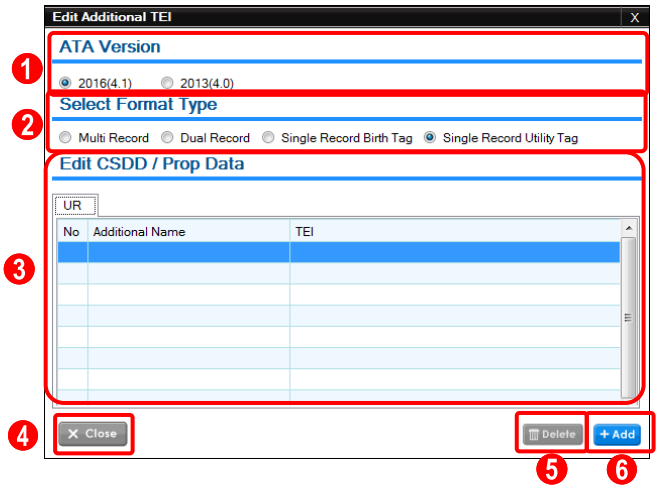
When Dual Record has been selected using the tag type selection button



When Single Birth Record has been selected using the tag type selection button



When Single Utility Record has been selected using the tag type selection button



1 ATA Version radio button

This radio button is used to select the version of ATA Spec2000.

2 Tag type selection radio buttons

These radio buttons are used to select the type of the tag that contains the additional information TEI to be edited.

❸ Additional information TEI display area

This area displays a list of additional information TEIs that have already been defined.

To delete an additional information TEI, select the TEI to be deleted from the list of TEIs that are displayed.

The tabs at the top left of the display area are used to switch between types of records.

The display content for each column is as follows:

- **No**: This column displays the sequential number.
- **Additional Name**: This column displays the type of the additional information TEI. TEIs listed in “ATA Common Data Support Dictionary (CSDD)” are displayed as “CSDD”. TEIs that have been specifically defined by the user are displayed as “Prop Data”.
- **TEI**: This column displays the additional information TEIs that have already been defined.

❹ **Close** button

This button closes the additional information TEI editing screen.

❺ **Delete** button

This button deletes the TEI selected in the additional information TEI display area.

❻ **Add** button

This button is used to display the additional information TEI addition window.

■ Operating procedure

(1) Click the **TEI Setting** button in the **Parts Maintenance Records** window.

(2) Use the ATA Spec 2000 Revision selection radio button to select the version of ATA Spec2000.

(3) Use the tag type selection radio buttons to select the type of the tag that contains the additional information TEI to be modified.

(4) Use the tabs at the top left of the additional information TEI display area to select the record that contains the additional information TEI to be modified.

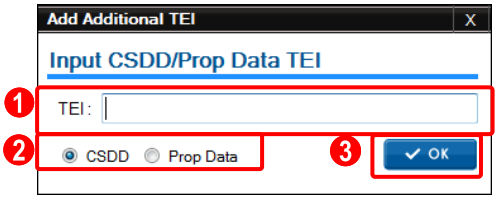
(5) Any additional information TEIs that have already been defined will be displayed in the additional information TEI display area.

(6) To delete one of the additional information TEIs that are displayed, select a TEI displayed in the additional information TEI display area, and then click the **Delete** button.

(7) To add an additional information TEI, click the **Add** button.

4.10.1 Add Additional Information TEIs

Clicking the **Add** button in the additional information TEI editing window displays the additional information TEI addition window.



1 Additional information TEI input field

This field is used to enter an additional information TEI.

Refer to the *RFID Data Management Pro & RFID Label Design and Encoding Management Pro User's Guide Appendixes* for details on the input specifications for additional information TEI.

2 Additional information TEI type selection radio buttons

These radio buttons are used to select the type of the additional information TEI to be added.

- **CSDD**: Select this option to add a TEI listed in “ATA Common Data Support Dictionary (CSDD)”.
- **Prop Data**: Select this option to add a TEI that the user can define freely.

3 **OK** button

Clicking this button adds the TEI that has been entered in the addition information TEI input area.

■ Operating procedure

(1) Click the **Add** button in the additional information TEI editing window.

(2) Use the additional information TEI type selection radio buttons to select the type of the additional information TEI to be added.

(3) Enter the TEI to be added in the additional information TEI input area.

(4) Click the **OK** button. The TEI that has been added will be displayed in the additional information TEI display area of the additional information TEI editing window. If **Prop Data** has been selected using the additional information TEI type selection radio buttons, an underscore ("_") will be prepended to the beginning of the TEI that has been added when it is displayed.

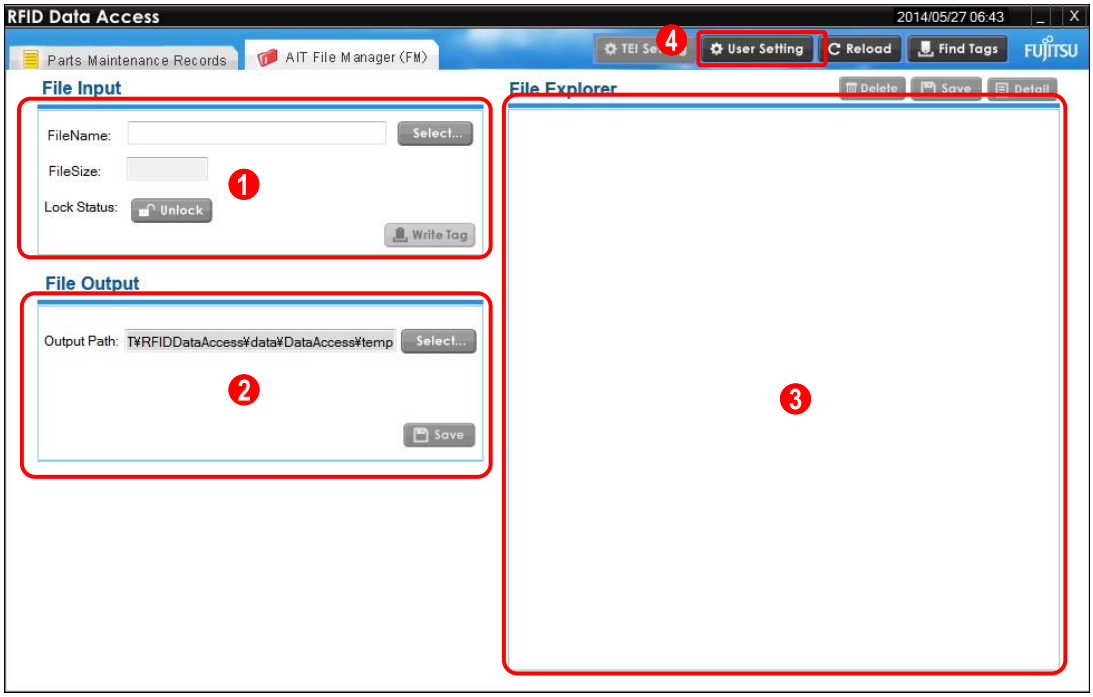
! Caution

- In order to enter values for additional information TEIs, the additional information TEIs must be set up for each PC.
- The information for additional information TEIs is saved in the "additional-setting.xml" file.
  By copying the "additional-setting.xml" file to another PC, the additional information TEI settings can be inherited on the other PC.
  The "additional-setting.xml" file must be located in the installation folder.
  Copy the "additional-setting.xml" file and then start this application.

4.11 AIT File Manager

Multiple files (such as image files and text files) can be written to the custom user area, and these files can also be read and displayed as a list.

! Caution	The AIT File Manager function supports only 8Kbyte tag. Please make an inquiry to Fujitsu Customer Support if using it.



1 **File Input** area

This area is used to select a file to write to the custom user area, to change the lock settings, and to write the file.

2 **File Output** area

This area is used to specify the storage folder on the PC for the files that are read from the tag.

3 **File Explorer** area

This area displays the data that has been written to the tag.
The data is displayed visually in a tree structure based on the format.

4 **User Setting** button

This button is used to display the user management window.
The user management window can be used to add, change and remove users, and to change passwords and so on.
Note that files cannot be written if there are no users.
To write files, a user must first be created using the user management window.

4.11.1 Specify a File Storage Folder

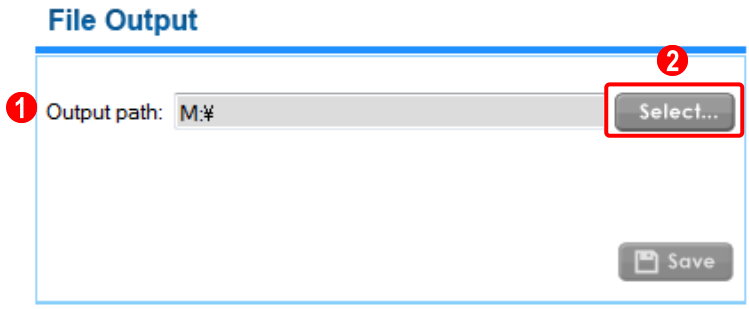
Specify the folder to be used when files are read or saved.

By default, the folder is set to the folder where the application has been installed.

If necessary, the file storage folder can be changed to another folder.

The file storage folder is specified in the **Output path** field.

To specify a different file storage folder, that folder must have already been created in advance.



1 **Output path** field

This field is used to specify the folder that will store the files that are read from the tag.
The specified folder can be changed later using the **Select** button.

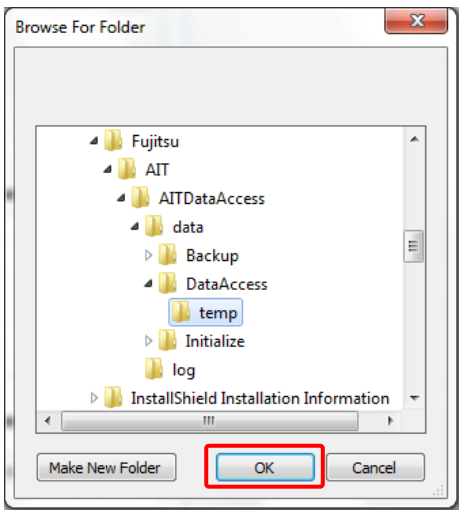
2 **Select** button

This button is used to specify the folder that will store the files that are read from the tag.
Any folder can be specified.

■Operating procedure

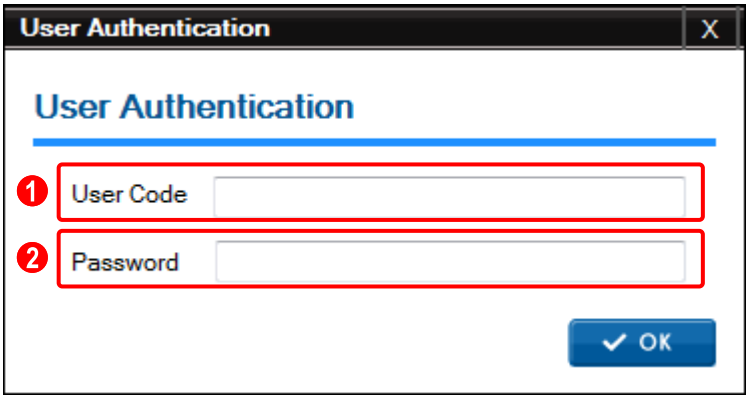
(1) Click the **Select** button to open the **Browse for Folder** dialog box.

(2) Select a folder that will store the files that are read from the tag, and then click the **OK** button.



4.11.2 User Authentication Window

This window is displayed when files are written to (or deleted from) the custom user area, or when **Change User Code and Password**, **Change Password**, or **Delete User** is selected in the user management window.



1 User Code field

This field is used to enter the user account code.

Enter the user code using one to six alphanumeric characters (A to Z, a to z, or 0 to 9).

The code is case-sensitive and needs to be specified.

2 Password field

This field is used to enter the password.

Enter the password using one to eight alphanumeric characters (A to Z, a to z, or 0 to 9). The password is case-sensitive. The user code and password are authenticated using the content registered on the tag.

4.11.3 File Management

Users can manage files with the following two types of attributes.

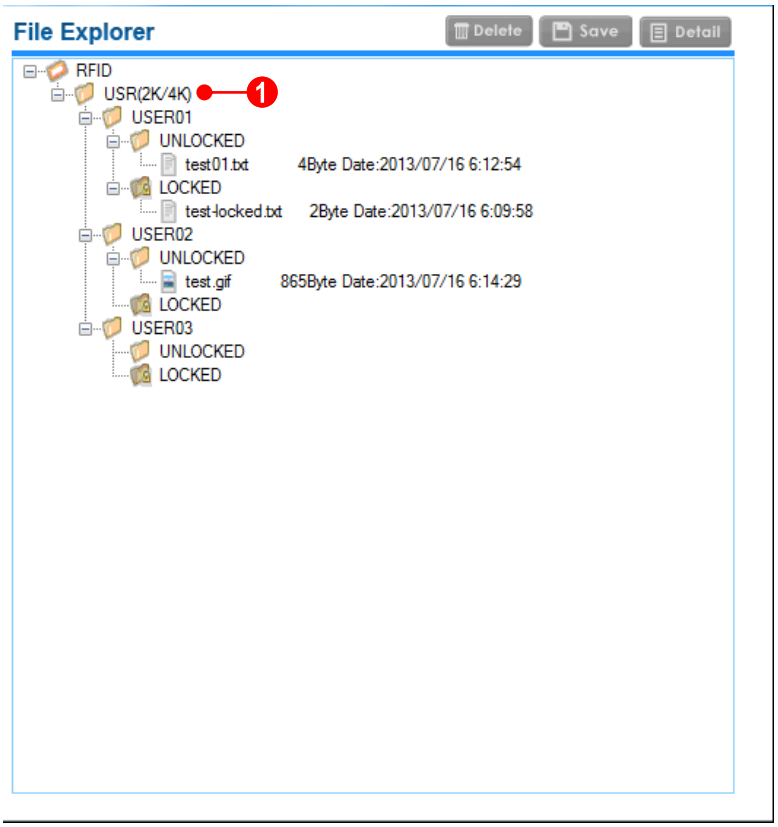
- UNLOCK: Unlocked files can be deleted. When a file is deleted, the memory area occupied by the file is released.
- LOCK: Locked files cannot be deleted.

♦ **Reference**

• Locked files cannot be deleted, so keep locked files to the minimum required, taking into account the capacity of the tag.

4.11.4 Read Files

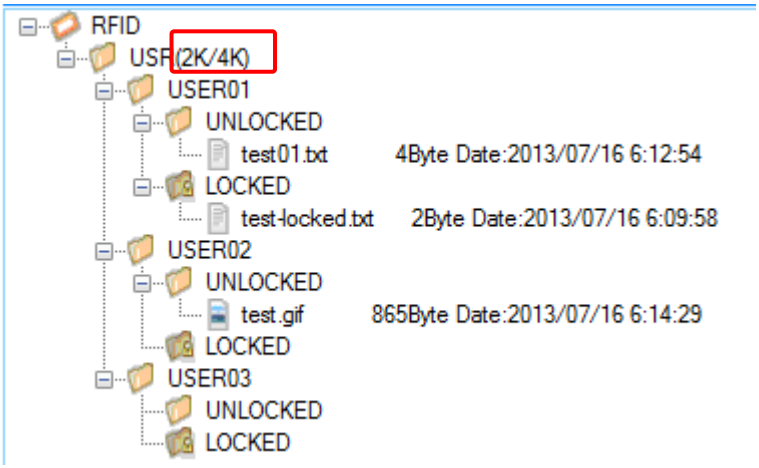
This window displays a list of the files that have been written to the tag for the authenticated user. Locked and unlocked files are displayed separately.



❶ **USR** folder

This folder displays the user code that is managing the files, as well as the files that are managed (in tree format).

The numbers in parentheses next to the **USR** folder indicate the approximate size, in kilobytes, of the amount of space currently being used and the total amount of space in the custom user area.



Each user folder is displayed under the **USR** folder.

- **UNLOCKED** folder

  This folder displays the files that can be deleted.

- **LOCKED** folder

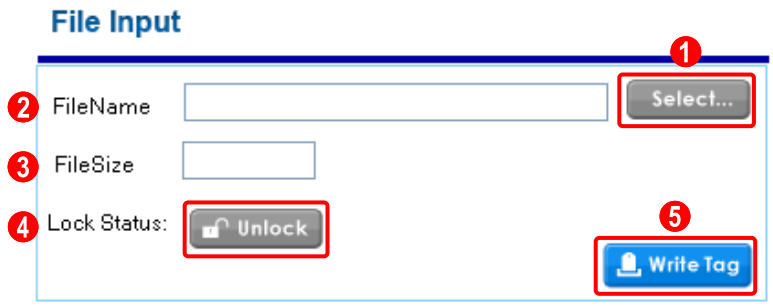
  This folder displays the files that cannot be deleted.

■Operating procedure

(3) Double-clicking the **USR** folder (or clicking the **[+]** icon next to it) displays the UNLOCKED and LOCKED folders separately for each user code.

4.11.5 Write Files

When files are written to tags, they are associated with the user account that manages them.
It is also possible to specify the lock status when files are written.



❶ **Select** button

This button displays the window for selecting the file to be written to the tag.

❷ **FileName** field

This field displays the pathname and file name of the file to be written to the tag.

❸ **FileSize** field

This field displays the size of the file to be written to the tag.

❹ **Lock Status** button

This button is used to specify the lock status.

The name of the **Lock Status** button switches between **Unlock** and **Lock** every time the button is clicked.

- **Unlock**: If a file is written when this button is displayed as “Unlock” (unlocked), the file can be deleted.
- **Lock**: If a file is written when this button is displayed as “Lock” (locked), the file cannot be deleted.

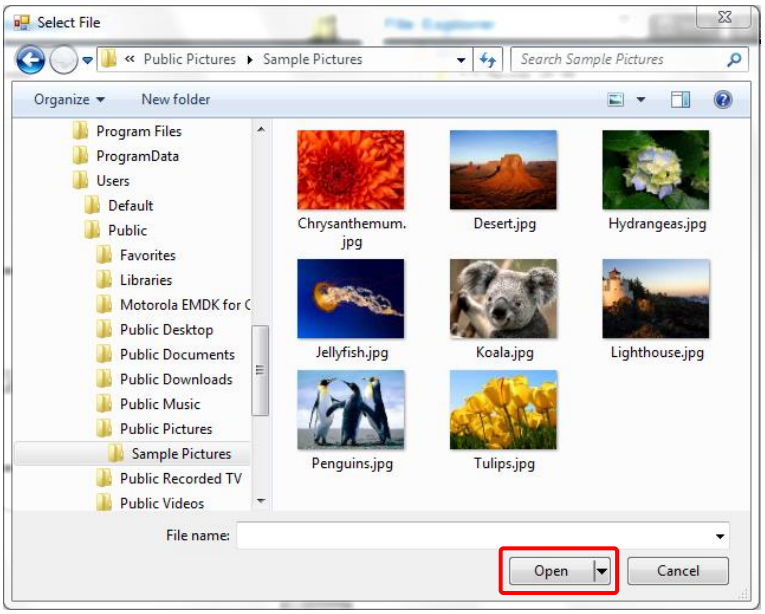
❺ **Write Tag** button

This button writes the selected file to the tag.

■ Operating procedure

(1) Click the **Select** button to open the **Select File** dialog box.

(2) Select a file and then click the **Open** button.

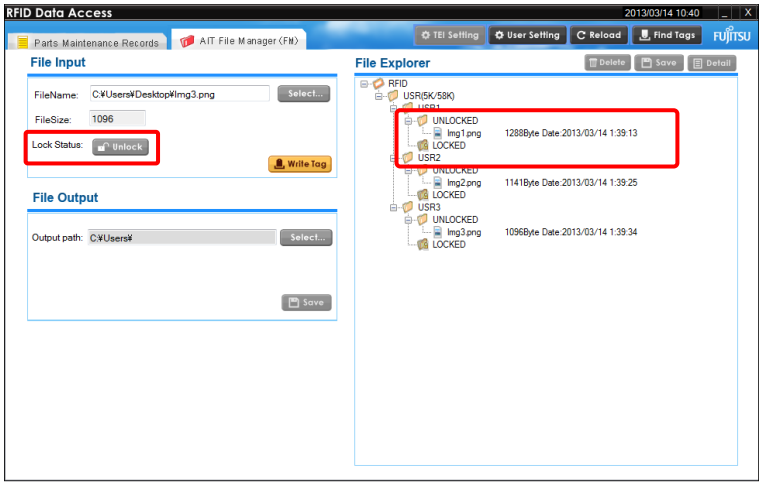


♦**Reference:**

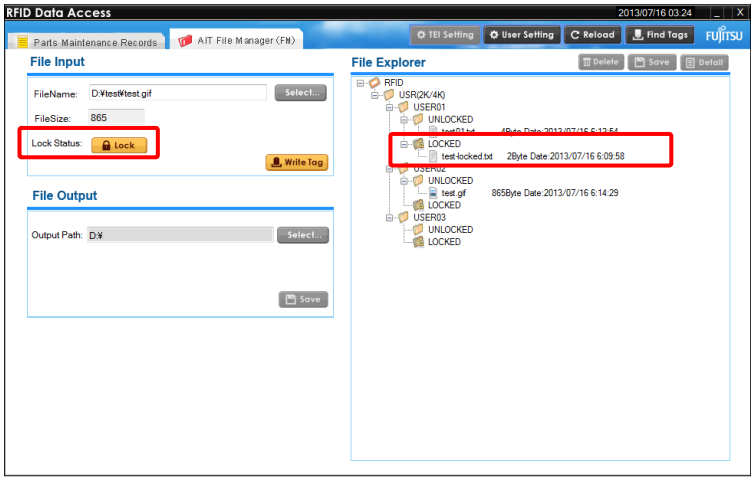
- Specify the file name using no more than 15 ASCII characters, including the file extension. If the file name is more than 15 characters long, take appropriate action such as changing the file name before specifying it.
- If a file with the same name is written for the same user, then the newly written file will be renamed automatically (such as “Sample(1).txt”). Note that in this case the characters that are added as part of the renaming process are also included within the 15 character limit for the length of the file name.

(3) Click the **Write Tag** button, and the user authentication window will be displayed, and the selected file will be written to the tag if the authentication is successful.
The message “Now Accessing a Data in the Tag” will be displayed while the file is being written, and the latest status will be displayed in the tag data display area when the file finishes being written.

(4) When a file is written to the tag with “Unlock” status, the file will be displayed under the **UNLOCKED** folder.



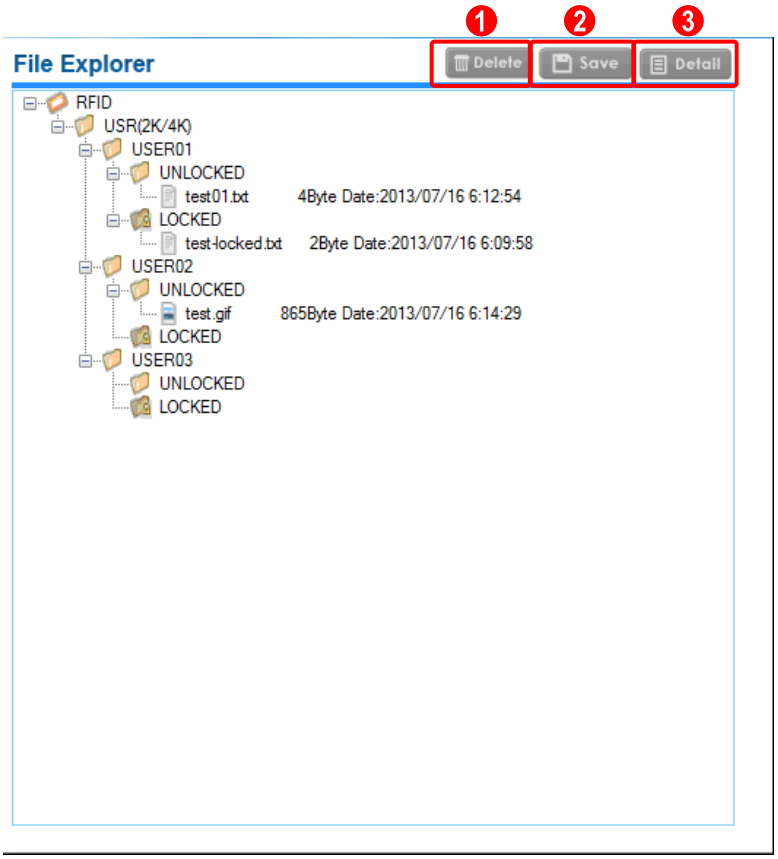
(5) When a file is written to the tag with “Lock” status, the file will be displayed under the **LOCKED** folder.



4.11.6 File Operations (Display Details, Delete and Save Files)

There are the following three methods for operating on files.

- Button operations
- Operations via shortcut menus (right-clicking)
- Operations via double-clicking



❶ **Delete** button

This button deletes the selected file.

Only files that have been written to the UNLOCK folder for the authenticated user can be deleted.

❷ **Save** button

This button saves the selected file to the PC.

The result is the same if the **Save** button in the **File Output** section is clicked.

❸ **Detail** button

This button displays the selected file.

4.11.6.1 Displaying File Details

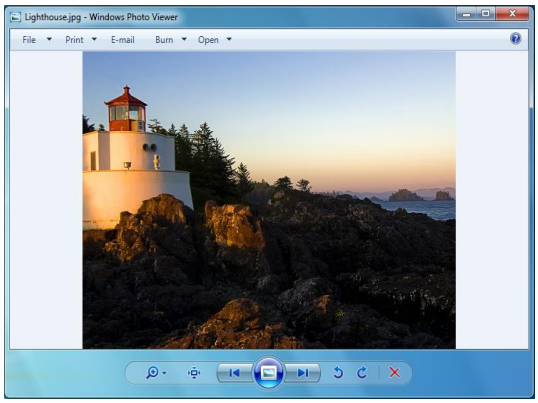
■Operating procedure

(1) Select a file and then click the **Detail** button.

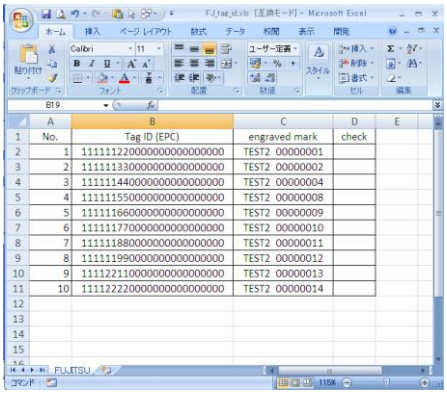
If file extensions have been associated with the program to start, the selected file will be displayed.

Files that have not been associated with a program will not be displayed.

An image file



An Excel file



♦ **Reference:**

- The result is the same if **Detail** is selected from the right-click context menu for the file, or if the file is double-clicked.
- As part of this processing, the file read from the tag is output to a temporary folder, and then the file is displayed, the appropriate program is executed, and other processing is performed.

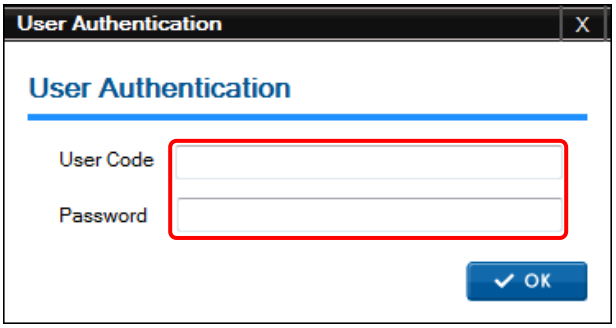
! Caution • Changing the file that is displayed and saving it will not update the file that has been written to the tag.

4.11.6.2 Delete Files

■Operating procedure

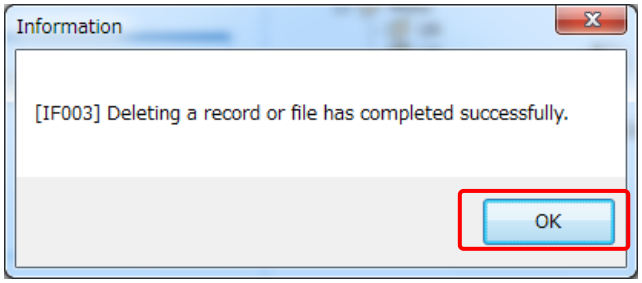
(1) Select a file and then click the **Delete File** button, and the user authentication window will be displayed.

(2) Enter the password. The user code for the selected field is displayed in the **UserCode** field, so there is no need to enter the user code.



♦ Reference • The result is the same if **Delete** is selected from the right-click the context menu for the file.

(3) A message will be displayed when the authentication completes, and so click the **OK** button.



♦ Reference: • When a file is deleted, the memory area occupied by the file is released from the custom user area, and the amount of unused memory space increases.

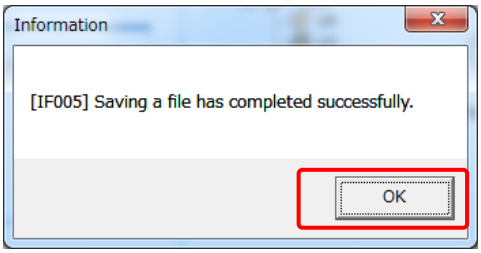
! Caution • The only files that can be deleted are those files in the UNLOCKED folder for the authenticated user.

4.11.6.3 Save Files

■Operating procedure

(1) Select a file and then click the **Save** button, and a message dialog box will be displayed.

(2) Click the **OK** button.



♦ **Reference**

- The result is the same if **Save** is selected from the right-click the context menu for the file.
- The result is the same if the **Save** button in the **File Output** section is clicked.

(3) When the save completes, a file is created in the specified folder.

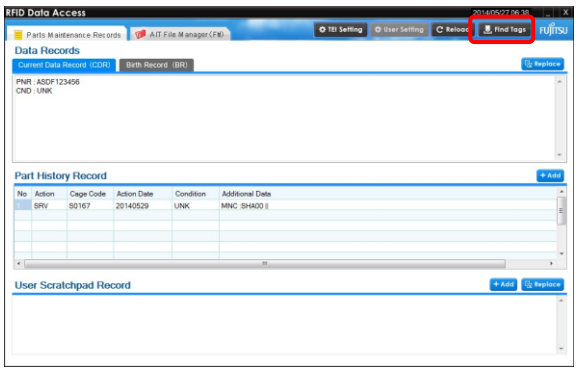
♦ **Reference:**

- The file is saved to the folder specified by the **Output Path** field.
- If the **Save** button is used, the program associated with the file extension will not be executed automatically.
- If there is already a file with the same name in the folder where the file is to be saved, a dialog box will be displayed allowing the user to change the folder where the file is to be saved, or to overwrite the existing file.

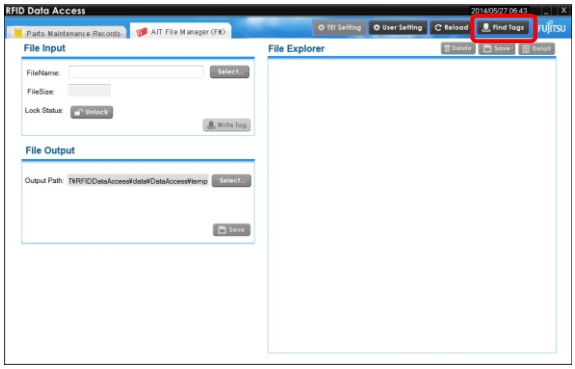
4.11.7 Switch to another Tag

To change the target tag, click the **Find Tags** button outside either the **Parts Maintenance Record** tab or the **AIT File Manager** tab to display the **Select a Part** window.

Parts Maintenance Records

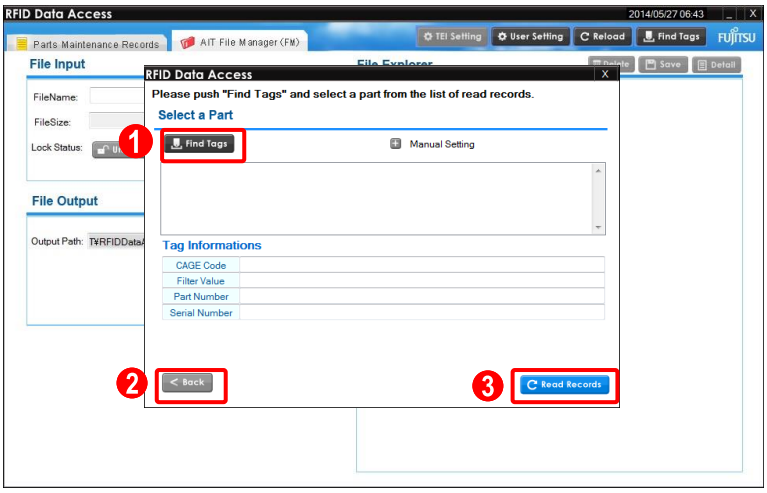


AIT File Manager



The differences between this window and the tag detection window (**Select a Part**) that is displayed when the application is first started are as follows:

- The window title is different
- There is no menu for selecting between the **Parts Maintenance Record** function and the **File Manager** function. (After a tag is selected, the display returns to the window from which this window was called.)



1 **Find Tags** button / **Cancel Detection** button

Either the **Find Tags** button or the **Cancel Detection** button will be displayed, depending on what is happening.

- **Find Tags** button

  This button starts tag detection. While tags are being detected, an icon is displayed next to the button. While tag detection starts, the **Find Tags** button will disappear, and the **Cancel Detection** button will be displayed. Other operations can be performed while tags are being detected.

  When a tag is detected, its EPC is displayed in the EPC list box. If multiple tags are detected, EPCs will be displayed on multiple lines.

- **Cancel Detection** button

This button is displayed while tags are being detected. This button stops tag detection.

When tag detection is canceled, the **Cancel Detection** button will disappear, and the **Find Tags** button will be displayed.

2 **Back** button

This button closes the current window.

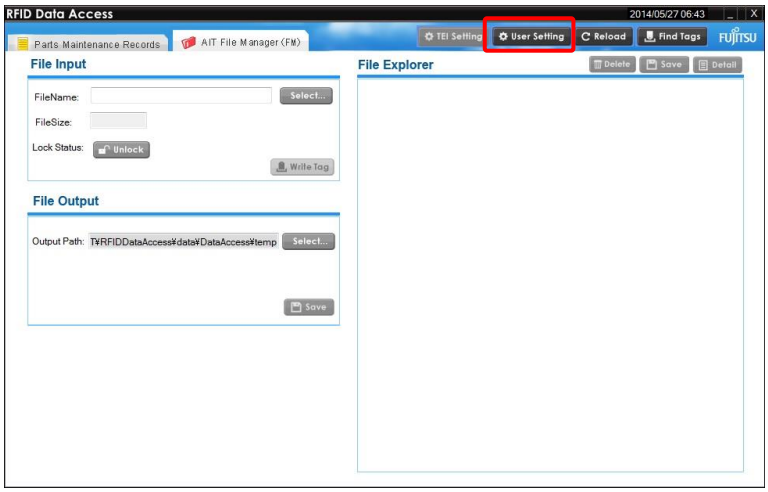
The previous tag content will be retained without selecting a new tag.

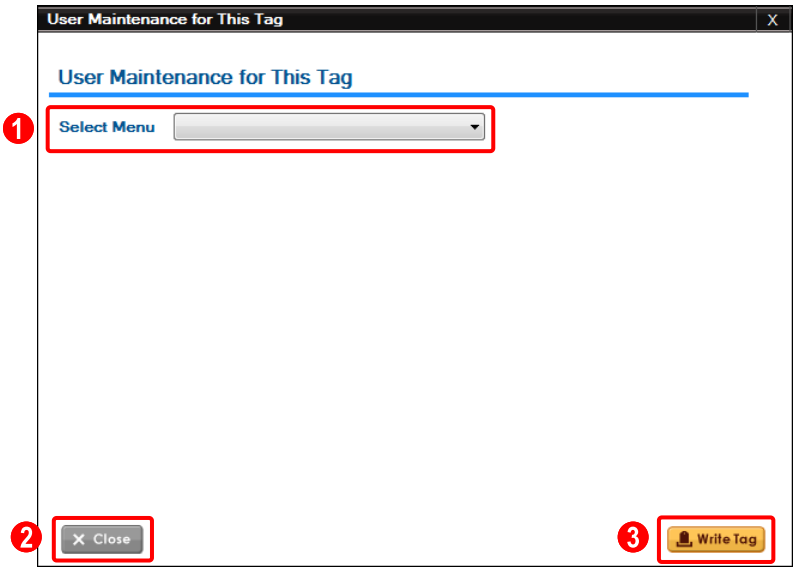
3 **Read Records** button

This button is used to read from the tag selected in the EPC list box and return to the window from which this window was called.

4.11.8 User Management

Clicking the **User Setting** button displays the user management window.



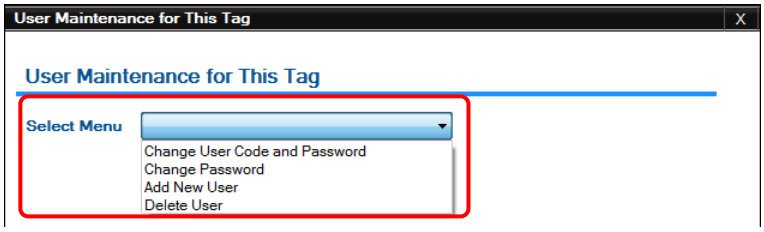


❶ **Select menu** pull-down menu

Select which operation to perform from the list of options in the **Select menu** pull-down menu.

Fields will be displayed to match the operation to be performed.

Four different operations can be selected from the **Select menu** pull-down menu.



- **Change User Code and Password**

  This option simultaneously changes both the user account code and the password for the selected user account.

- **Change Password**

  This option changes only the password for the selected user account.

- **Add new User**

  This option adds a new user by specifying a new user account code and password.

- **Delete User**

  This option deletes the selected user account.

❷ **Close** button

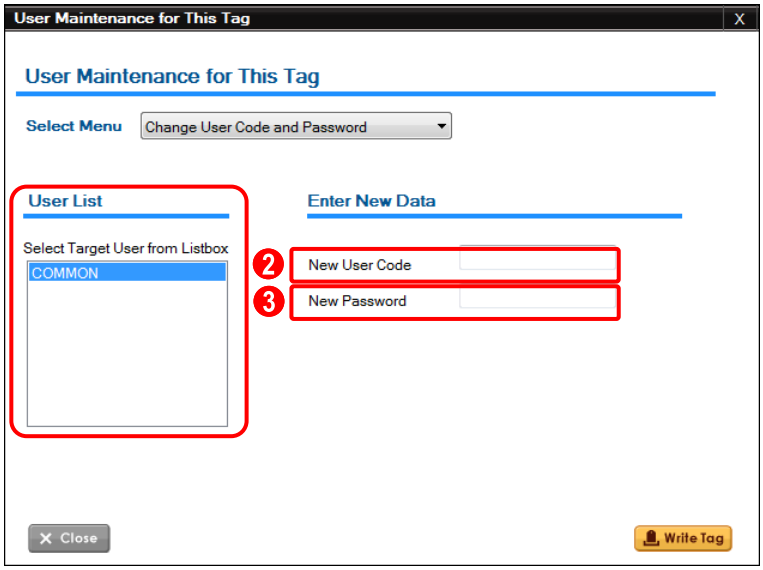
This button closes the window.

❸ **Write Tag** button

This button executes the option selected from the **Select menu** pull-down menu.

! Caution	• During user management operations, it must be always possible to read from and write to the tag in question.

4.11.8.1 Change User Codes and Passwords



1 User List box

The **User List** box displays a list of the user accounts that have been registered on the tag. Select a user account from this list to change the user account code or password.

2 New User Code field

This field is used to enter a new user account code.

3 New Password field

This field is used to enter a new password.

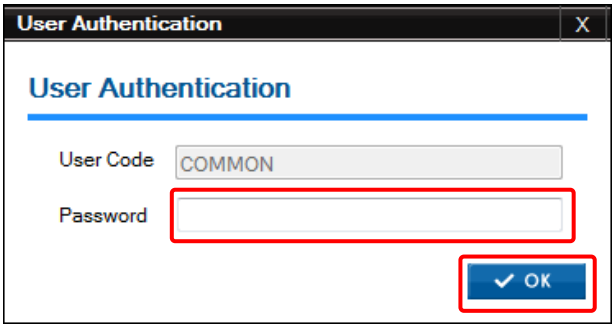
■Operating procedure

(1) Select **Change User Code and Password** from the **Select menu** pull-down menu.

(2) Use the **User List** box to select which user account to change.

(3) Enter a new user account code and password, and then click the **Write Tag** button to display the user authentication window.

(4) Enter the password and then click the **OK** button.



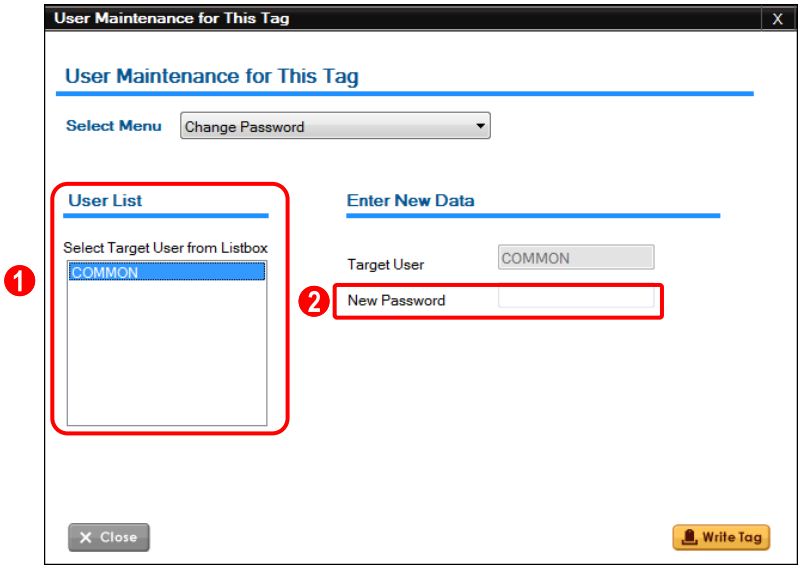
♦ **Reference**

- The default value is displayed in the **User Code** field, and cannot be changed.
  Only the password can be entered.

! Caution

- Existing user account codes cannot be entered in the **New User Code** field.

4.11.8.2 Change the Password



1 User List box

The **User List** box displays a list of the user accounts that have been registered on the tag.
Select a user account from this list to change the password.

2 New Password field

This field is used to enter a new password.

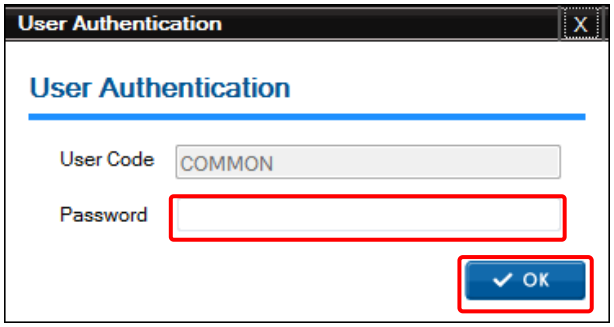
■Operating procedure

(1) Select **Change Password** from the **Select menu** pull-down menu.

(2) Use the **User List** box to select which user account to change.

(3) Enter a new password, and then click the **Write Tag** button to display the user authentication window.

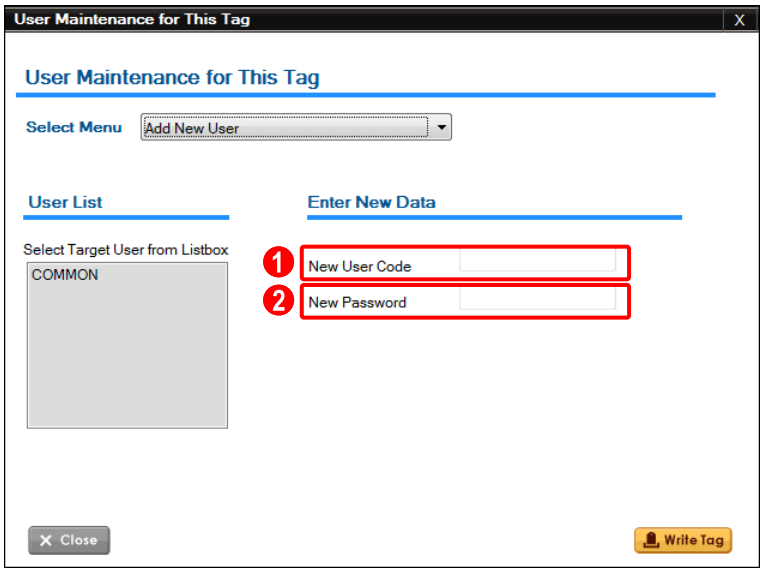
(4) Enter the password and then click the **OK** button.



♦ **Reference**

- The default value is displayed in the **User Code** field, and cannot be changed.
  Only the password can be entered.

4.11.8.3 Create a New User



❶ **New User Code** field

This field is used to enter a new user account code.

❷ **New Password** field

This field is used to enter a new password.

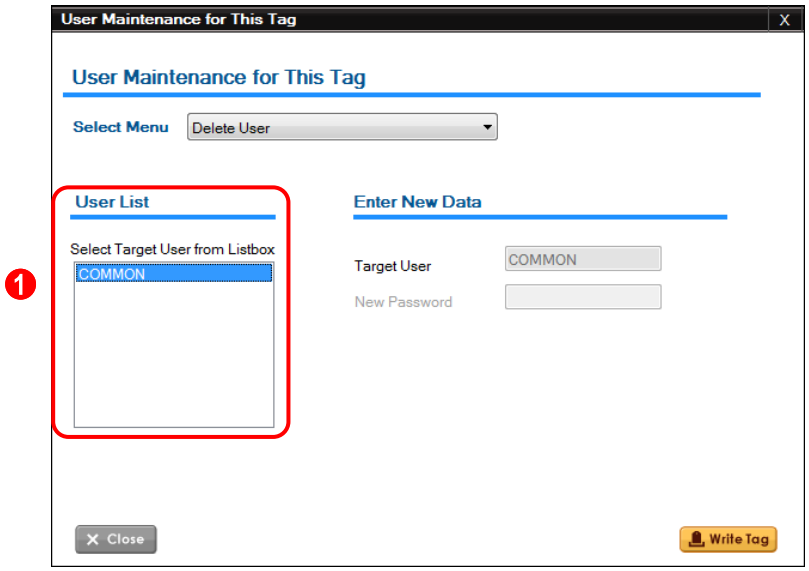
■Operating procedure

(1) Select **Add New User** from the **Select menu** pull-down menu.

(2) Enter a new user account code and password, and then click the **Write Tag** button.

♦ **Reference:** • There is no need to select a user account in the **User List**. Even if a user account has been selected, it will not be used.

4.11.8.4 Delete a User



1 **User List** box

The **User List** box displays a list of the user accounts that have been registered on the tag. Select a user account from this list to delete the user account.

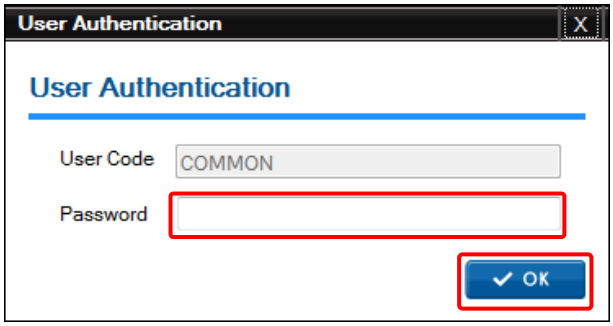
■Operating procedure

(1) Select **Delete User** from the **Select menu** pull-down menu.

(2) Use the **User List** box to select which user account to delete.

(3) Click the **Write Tag** button to open the user authentication window.

(4) Enter the password and then click the **OK** button.



♦ **Reference**	• The default value is displayed in the **User Code** field, and cannot be changed. Only the password can be entered.
! Caution	• When a user account is deleted, all of the files that have been registered for the user account are also deleted, regardless of whether they are locked or unlocked.

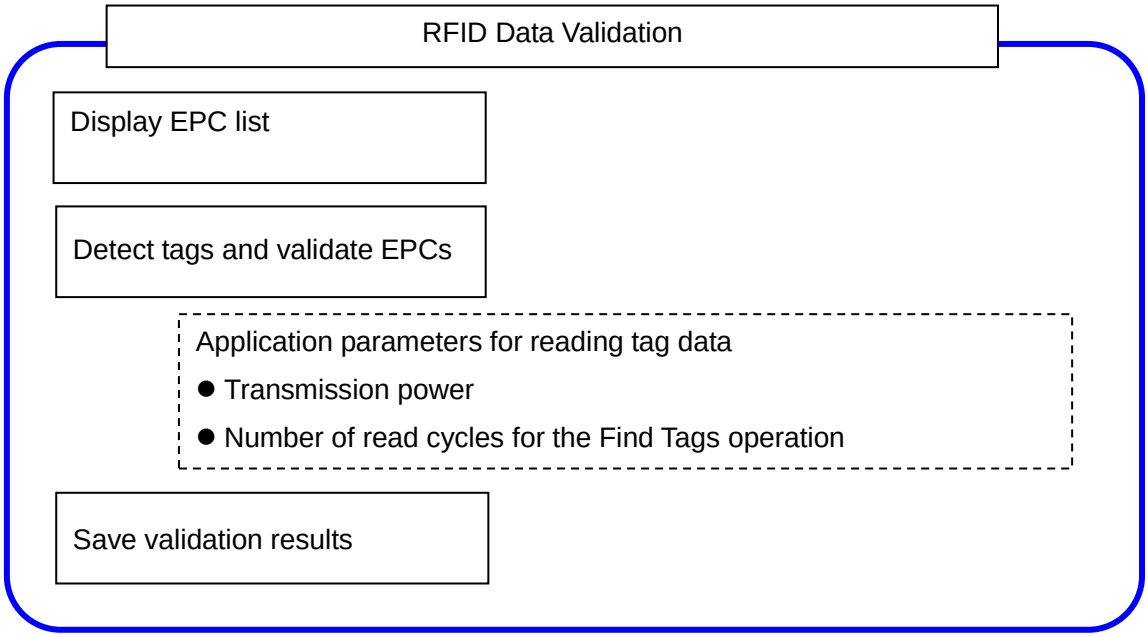
5 RFID Data Validation

5.1 Overview

This application compares EPC data on RFID tags against the recorded EPC data generated when the tags were commissioned. The validation results are saved in CSV files.

5.2 Functions

The functional configuration for this application is as follows:



5.3 Function Overview

This section provides an overview of the functions of this application.

● Displaying EPCs in list file

This application displays EPCs stored in selected list file.

● Tag detection and EPCs validation

This application compares the EPC data on a series of RFID tags against the EPC data recorded when the tag was commissioned. Reading parameters such as transmission power and the number of read cycles for the **Find Tags** operation can be changed.

When the **Find Tags** button is activated, the application tries to detect and reconcile the tags that have been identified in the input EPC list. As tags are detected and processed, they are removed from the working area, and the validation results are recorded in the appropriate output CSV files (Pass/Fail).

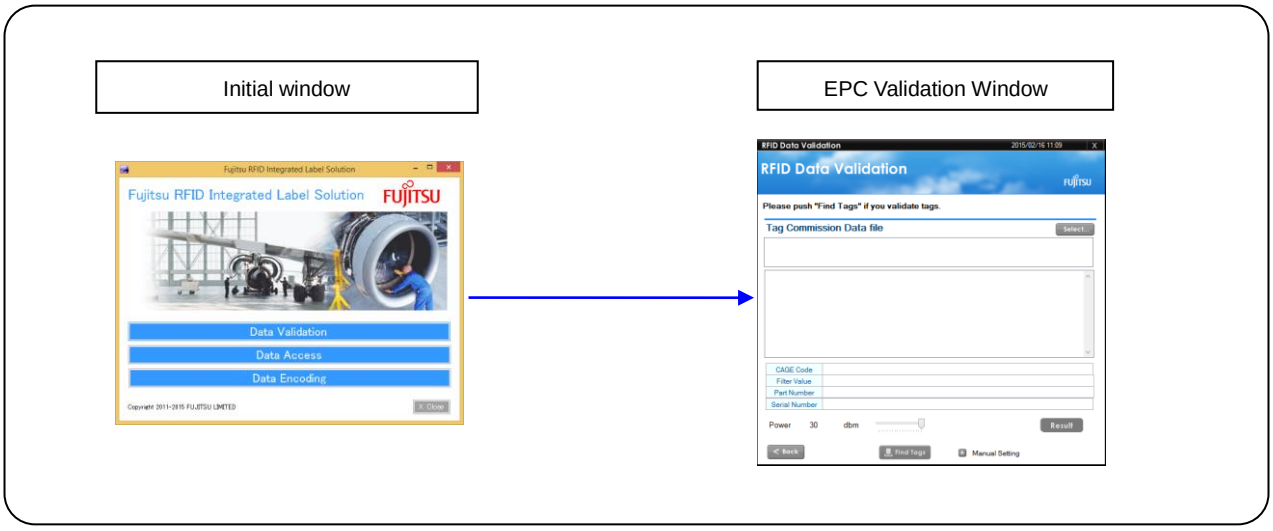
In a follow-up operation, the user can use the “Fail” CSV file as the input EPC list for a new attempt to detect/validate the remaining tags.

● Saving validation results

This application saves the validation results in CSV files.

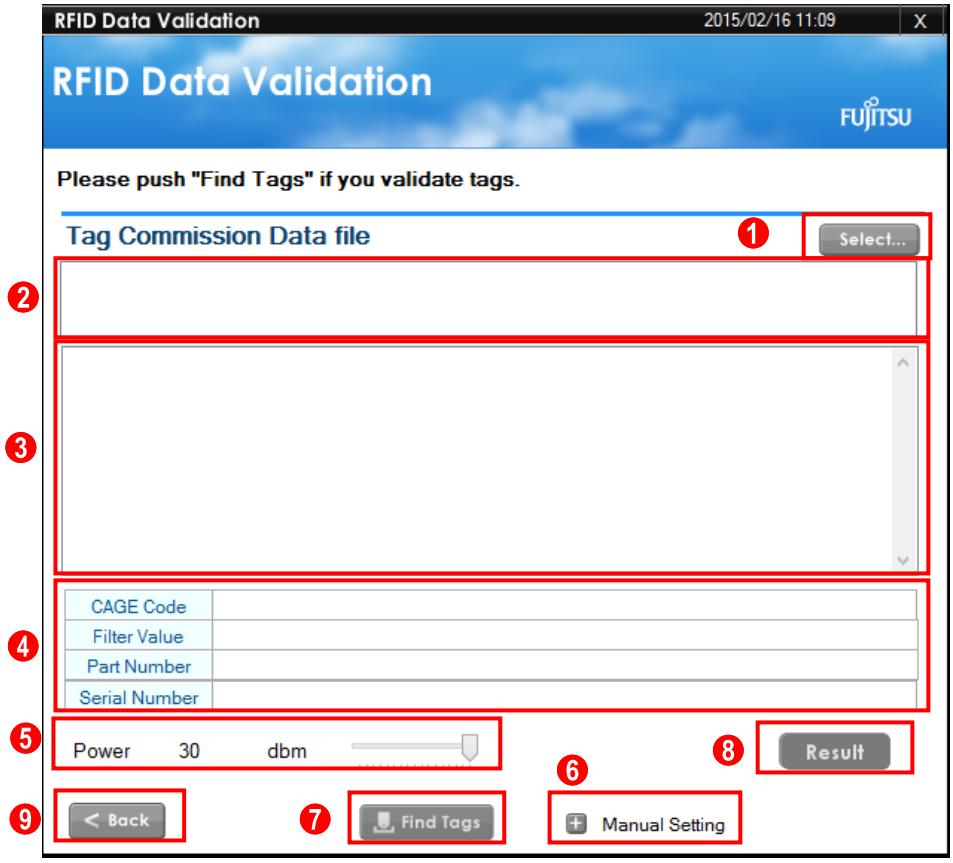
5.4 Screen Transitions

The following diagram illustrates the screen transitions of this application.



5.5 EPC Validation

The following window appears when **RFID Data Validation** is clicked.



❶ **Select** button

Open a dialog to select a file of EPC list.

❷ **EPC List File** area

This area displays files of EPC list. The following folder is opened as default.

C:\Users\Public\RFID Data Management Pro\DataAccess\CommissionData

❸ **EPC** area

This area displays EPCs stored in selected file in **EPC List File** area (this application identifies the data in the column whose header is “EPC” as EPC).

❹ **EPC Details** area

This area shows the details of selected EPC in **EPC** area.

❺ **Power** slider

This slider is used to change the transmission power of the fixed reader to read tag data. The default setting is 30dBm. The maximum / minimum values are 30 / 14dBm.

❻ **Manual Setting** button

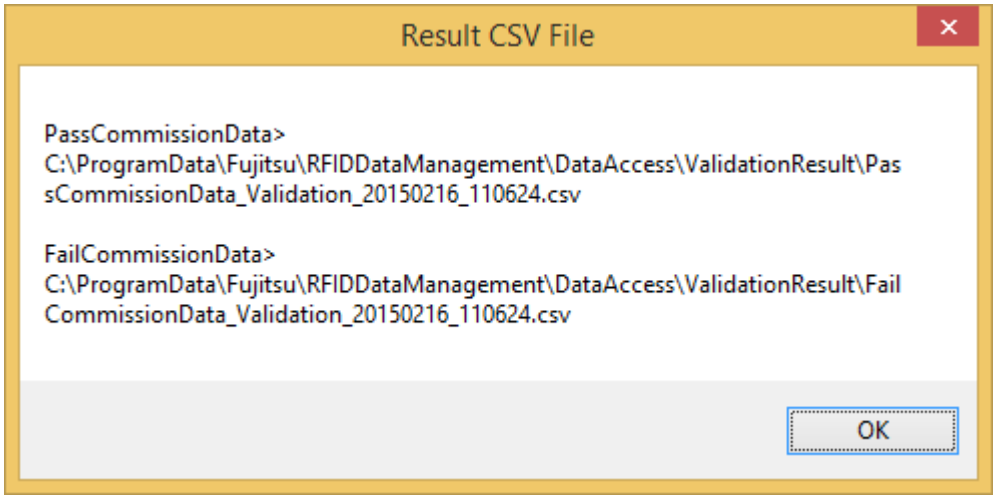
This button is used to change the number of read cycles when performing the Finds Tag operation. The default setting is 30 times. The maximum / minimum are 30 / 1 time(s).

❼ **Find Tags** button

This button is used to start reading tags.

❽ **Result** button

This button is used to save validation results in CSV files. The path and file name are displayed on dialog box.



❾ **“Back” button**

This button is used to close **RFID Data Validation** window and return to initial window.

5.6 Input and Output Files

This section explains about input and output files used in **RFID Data Validation**.

5.6.1 File List

The following list shows the files used in **RFID Data Validation**.

No.	File	Input / Output	Description
1	EPC list file	Input	List of EPCs written to RFID tags
2	EPC validation result file (passed EPCs)	Output	List of EPCs from the tags which are exactly the same as the data in EPC list.
3	EPC validation result file (failed EPCs	Output	List of EPCs from the tags which are not exactly the same as the data in EPC list.

5.6.2 EPC List File

- File type

  CSV file that contains the header named as “EPC”.

- File name

  Any name is permitted.

- Default path

  C:\Users\Public\RFID Data Management Pro\DataAccess\CommissionData

5.6.3 EPC Validation Result File (passed EPCs)

- File format

  CSV file. Same format (same columns) as input file (**EPC list file)**

- File name template

  PassCommissionData_Validation_YYYYMMDD_hhmmss.csv

- Default path

  C:\Users\Public\RFID Data Management Pro\DataAccess\ValidationResult

5.6.4 EPC Validation Result File (failed EPCs)

- File type

  CSV file. Same format (same columns) as input file (**EPC list file)**

- File name template

  FailCommissionData_Validation_YYYYMMDD_hhmmss.csv

- Default path

  C:\Users\Public\RFID Data Management Pro\DataAccess\ValidationResult