# FORCAM ${ }^{\text {m }}$ FORCE 

## Version 5.9 IDoc Dashboard

Manual

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we speak machine

## 1 Introduction

The FORCAM SAP Adapter integration interface uses IDocs as a means for bidirectional communication between FORCAM FORCE ${ }^{\text {TM }}$ and the SAP ERP system. In the FORCAM SAP integration interface, dedicated FORCAM IDoc basic types are used. IDocs are a tried and tested reliable SAP method which, however, also requires monitoring and processing by the user.

If IDocs cannot be posted and are in an error status, this may cause posting interruptions at the workplace or operation level depending on the serialization used. Such interruptions must be quickly identified and corrected. This can be a time-consuming task and requires a good deal of experience and circumspection. In most cases, numerous transactions must be accessed in SAP which are then only available in parallel modes. More detailed information is difficult to access.
This is the background of the idea to design a uniform user interface which can provide a sound basis for optimized navigation.

The FORCAM IDoc Dashboard is a component of the FORCAM SAP Adapter integration interface. It is a tool which has been optimized for use with FORCAM SAP Adapter. IDoc monitoring for the FORCAM basic types is substantially facilitated and the user obtains a detailed view of the current posting situation. Malfunctions can therefore be detected and eliminated quickly and efficiently.
Detailed information about IDoc processing, e.g. details of the production order, are available quickly and in a clear arrangement.

This dashboard functionality provides SAP users with a central point of access to ensure transparency about the IDoc process and data processing operations of the bidirectional FORCAM SAP Adapter interface.

## 2 FORCAM IDoc Dashboard

Open the FORCAM IDoc Dashboard using the SAP transaction SA38 and executing the /FFMES/IDoc_DASHBOARD program in SAP.

The graphic below shows the functions available for inbound IDoc and outbound IDoc items of the bidirectional FORCAM SAP Adapter interface.


Fig. 1: Process flow and functions in the FORCAM IDoc Dashboard

The dashboard provides the following functions for the inbound IDoc part of the bidirectional FORCAM SAP Adapter interface:

Table 1: List of IDoc inbound functions

| Submodule | Description |
| :--- | :--- |
| Display IDoc <br> Dasplay IDOC | Shows all details for a selected IDoc. |
| Production order display <br> Reproduction order display | Shows the associated production order if the selected IDoc has a <br> production order reference. |
| Reprocess IDoc | You can initiate re-processing for a selected IDoc which has not <br> yet been processed or has an error. |
| Delete IDoc | You can delete selected IDocs. Their entries are removed. |
| Logical deletion | Selected IDocs are merely set to status 68 (processing disabled). <br> This will exclude these IDocs from further processing. Their data <br> continue to exist. |
| Email Notification | You can send the daily IDoc status notification for a manually se- <br> lected day to an email address. This will include the complete <br> IDoc summary for inbound and outbound IDocs as well as for the <br> IDoc status. |
| YEmail Notification |  |

The dashboard provides the following functions for the outbound IDoc part of the bidirectional FORCAM SAP Adapter interface:

Table 2: List of IDoc outbound functions

| Dashboard IDoc outbound functions | Description |
| :--- | :--- |
| Display IDoc <br> 包Display IDOC | Shows all details for a selected IDoc. |
| Production order display <br> 掔Production order display | Shows the associated production order if the selected IDoc has a <br> production order reference. |
| Resend <br> — Resend | You can initiate another send process to the recipient for a se- <br> lected IDoc which has not yet been sent or has an error status. |
| Delete IDoc <br> \& Delete IDOC | You can delete selected IDocs. Their entries are removed. |

## Email Notification

You can send the daily IDoc status notification for a manually selected day to an email address. This will include the complete Email Notification IDoc summary for inbound and outbound IDocs as well as for the IDoc status.

### 2.1 FORCAM IDoc Dashboard View

Users can access the FORCAM IDoc Dashboard view using the SAP transaction SA38 in SAP and executing the /FFMES/IDoc_DASHBOARD program.

The screen is structured according to an input area for data filter definition for the IDoc interface (inbound and outbound IDocs) and a status view. In the status view, the user can see at a glance how many IDoc errors have occurred today (currently) as well as the number of IDocs with errors of the past week. If the entries in the input area are incorrect or incomplete, the user will be prompted by an error message in the footer (error message area) when clicking the button (for example, if a mandatory field is not filled in, see Fig. 2).

When executing the search with the entries made in the input area, the search results are displayed in a table view for inbound IDocs (see section 2.2) or outbound IDocs (see section 2.3) along with the available functions.

IDOC Monitoring
(2) 是 Execution of the search


Fig. 2: IDoc Dashboard view

The input fields available in the input area are listed below.
Table 3: Input fields in the IDoc Dashboard input area

| Submodule | Description |
| :---: | :---: |
| IDoc Basic Type | Specifies a dedicated IDoc basis type for the search. In this regard, there is a retroactive effect with the IDoc interface Direction field. You have to select the correct interface direction (Inbound or Outbound) for a given IDoc basic type. <br> IDoc outbound (equivalent to the system output from the SAP perspective): <br> /FFMES/f (production orders) <br> /FFMES/s (shift definitions) <br> /FFMES/h (selected master data) <br> IDoc inbound (equivalent to the system input from the SAP perspective): <br> /FFMES/r (confirmations) |
| IDoc Number | Each IDoc has a global unique IDoc number within SAP. You can either specify an explicit IDoc number or an IDoc number range as a filter element. |
| Created on | Specify a time filter from Date 1 to Date 2, referring to the IDoc creation time stamp. |
| Direction (of IDoc interface) | MANDATORY FIELD: You can use radio buttons to apply the filter entries and the data viewing range either to the IDoc inbound or IDoc outbound area. <br> If you specify an explicit basic type in the IDoc Basic Type field, the interface direction selected must be compatible with the IDoc basic type. |
| IDoc Status | A numeric filter for the IDoc status or from status number 1 to status number 2. <br> IDoc status codes: <br> 00 Not used, only R/2 <br> 01 IDoc generated <br> 02 Error passing data to port <br> 03 Data passed to port OK <br> 04 Error within control information of EDI subsystem <br> 05 Error during translation <br> 06 Translation OK <br> 07 Error during syntax check <br> 08 Syntax check OK <br> 09 Error during interchange handling <br> 10 Interchange handling OK <br> 11 Error during dispatch <br> 12 Dispatch OK <br> 13 Retransmission OK <br> 14 Interchange Acknowledgement positive <br> 15 Interchange Acknowledgement negative <br> 16 Functional Acknowledgement positive <br> 17 Functional Acknowledgement negative <br> 18 Triggering EDI subsystem OK <br> 19 Data transfer for test OK |

Error triggering EDI subsystem
Error passing data for test
Dispatch OK, Acknowledgement still due
Error during retransmission
Control information of EDI subsystem OK
Processing despite syntax error (outbound)
Error during syntax check of IDoc (outbound)
Error in dispatch level (ALE service)
Not used
Error in ALE service
IDoc ready for dispatch (ALE service)
Error - no further processing
IDoc was edited
Original of an IDoc which was edited
Error in control record of IDoc
IDoc reloaded from archive
Electronic signature not performed (timeout)
IDoc added incorrectly
IDoc archived
IDoc is in the target system (ALE service)
Application document not created in target system
Application document created in target system
IDoc was created by test transaction
IDoc added
Application document not posted
Application document not fully posted
Application document posted
Error during formal application check
Formal application check OK
IDoc with errors added
Test IDoc: Error during application check
IDoc copy from R/2 connection
Not used
Error during syntax check of IDoc (inbound)
Processing despite syntax error (inbound)
IDoc passed to application
Error passing IDoc to application
IDoc ready to be transferred to application
Error in ALE service
IDoc is waiting for predecessor IDoc (serialization)
Not used
Error - no further processing
IDoc was edited
Original of an IDoc which was edited
IDoc reloaded from archive
Not used, only R/2
IDoc archived
IDoc was created by test transaction
meric filter for IDocs relating to a specific production order or
umber range of production orders (range from order no. 1 to
ler no. 20)

|  | Numeric filter for IDocs relating to a specific production order or <br> a number range of production orders (range from order no. 1 to <br> order no. 20) further limiting the selection to a specific operation <br> or a number range of operations (range from order 1 to order 5). |
| :--- | :--- |
| Operation/Activity | Using an operation filter requires a production order filter as a <br> mandatory field. |
| Filter for IDocs relating to a specific workplace or a number range <br> of workplaces (range from WP001 to WP100) |  |

The IDoc Dashboard view offers the following function buttons.
Table 4: IDoc Dashboard function buttons

| Button | Description |
| :--- | :--- |
| (I) | Execute <br> All fields completed in the input area are verified for correctness. <br> If there is any implausibility, an error message is output in the er- <br> ror message area or in a dialog and information window. <br> If execution is completed successfully, the view changes to the <br> inbound or outbound view specified. The IDoc results are dis- <br> played in a list. |

### 2.2 INBOUND IDOCs View (IDoc Basic Type /FFMES/r)

The INBOUND IDOCs view contains an IDoc results view. This hit list is generated on the basis of the filter entries made by the user in the IDoc Dashboard view and the matching IDoc type during execution.

The following functions are available to the user for handling individual or multiple IDocs in the INBOUND IDOCs view:

- Display IDoc (single selection)
- Production order display (single selection)
- Reprocess IDoc (single selection)
- Delete IDoc (multiple selection)
- Logical deletion (multiple selection)
- Email notification (general function)

Table 5: Screen columns in the INBOUND IDOCs results view

| Screen columns | Description |
| :--- | :--- |
| 000 | IDoc signal light status: |
| 000 | - Red (error) |
| Oco | - Yellow (wait; could not yet be processed) |
| IDoc | Green (processed) |
| Created on | IDoc time stamp in date format dd.mm.yyyy |


| Basic Type | Basic type for inbound IDocs（confirmations） ／FFMES／R |
| :---: | :---: |
| Status | Numeric IDoc status（see section 2.1 for the status overview） |
| Description | Short description of the IDoc status |
| Segment name | IDoc segment name（confirmation IDoc） ／FFMES／SRUECK |
| Order | Number of the production order in case of an order－specific con－ firmation IDoc |
| OpAc | The associated operation number to which the confirmation IDoc refers（in case of an order－specific confirmation IDoc） |
| Record type（message types） | Specifies the record type（message type）of the confirmation IDoc． <br> Currently the FORCAM SAP Adapter processes and accepts the following record types of confirmation IDocs： <br> －Quantity message（QTYMG） <br> －Start message（OPSTR） <br> －End message（OPEND） <br> －Duration message（DURAT） <br> －Revision message（REVMG） |
| Workplace | Workplace |
| Direction（of the interface） | Numeric definition of the direction of flow for the bidirectional FORCAM SAP Adapter interface： <br> 2 ＝Inbound IDoc（confirmation process，receipt of messages from external systems） |
| Serialization | Unique global serialization key of the IDoc and telegram flow |

The INBOUND IDOCs view offers the following function buttons．
Table 6：Function buttons in the INBOUND IDOCs view

| Button | Description |
| :---: | :---: |
| 圖 | Select all／Deselect all <br> Selects or deselects all entries contained in the hit list |
| 9 | Details <br> Shows the available information about the table entry in a sepa－ rate window |
| 骂 | Sort in ascending order <br> Sorts the selected columns in ascending order |
| 军 | Sort in descending order <br> Sorts the selected columns in descending order |
| 凹 | Find <br> Search function within the result view |
| P｜ | Set filter <br> Filter the result view by the available columns |
| $\square$ | Print |

INBOUND IDOCs View (IDoc Basic Type /FFMES/r)
we speak machine

| 0 \% | Views <br> Change to SAP list output. To exit the list output, click |
| :---: | :---: |
| 5 $\square^{3}$ | Export <br> Exports the result view, for example, into a HTML or Excel file |
| 囲 | Change layout <br> Functions to change the layout and presentation of the screen content |



Fig. 3: INBOUND IDOCs table view with results from execution of the IDoc Dashboard

### 2.2.1 Display IDoc (SAP transaction WEO2)

You can use this function with each individual IDoc selected in the result view. The details of the IDoc are displayed to the user in a new view: The left-hand area contains an expandable tree structure of the IDoc data. The right-hand area displays the data details when an element is selected from the tree structure.

The basic structure of an IDoc is identical in the tree structure in SAP:

- IDoc number
- Control record
- Data record
- Status record

You can view the content of an IDoc using the SAP transaction WEO2. Moreover, the functions provided by SAP for this transaction are available (e.g. exporting, printing, etc.).


Fig. 4: IDoc detail view opened by the Display IDoc function

### 2.2.2 Production order display (SAP transaction COO3)

You can use this function with each IDoc selected in the result view if the IDoc describes an orderrelated (operation-related) confirmation message and includes this data reference.
If there is a reference to an order, the order number and operation are specified in the IDoc columns of the result view.

When executing the Production order display function, you get directly to the order header associated with the order number referenced in the IDoc. For this purpose, the identical transaction CO03 is called. All functions and information about production order, operation, components and material available in SAP are available here. The transaction COO3 is executed as a read-only operation with the attribute Production order display.


Fig. 5: Production order display with SAP transaction COO3 as a read-only operation

### 2.2.3 Delete IDoc

You can use this function with single or multiple IDocs selected in the result view for IDoc(s) with yellow or red signal light status (IDocs already processed and marked with green status cannot be deleted). This function deletes the IDocs including all data.

The user is prompted to confirm deletion.


Fig. 6: Confirming deletion of an IDoc

### 2.2.4 Email notification

This function is independent of the result view.
The user can select a date manually and enter the email address of the recipient in a separate dialog. The message will include the complete IDoc summary for inbound and outbound IDocs as well as for the IDoc status.

## Daily Idoc status Notification

(4)
$17.09 .2015{ }^{7}$
Email Address

```
```

Created on

```
```

Created on

```

Fig. 7: Sending a daily IDoc status notification by email
If there are no IDocs available for the date specified, the user receives an information message and an email is not sent.


Fig. 8: Email information dialog

\subsection*{2.2.5 Reprocess IDoc (SAP transaction BD87)}

You can use this function with each individual IDoc selected in the result view if the IDoc has yellow or red signal light status (IDocs already processed and marked with green status cannot be reprocessed).

This function initiates automatic reprocessing of the selected IDoc. Reprocessing involves redetermining the status of the IDoc; this can be verified at any time using the Display IDoc function. If reprocessing is successful and the IDoc is posted or processed correctly in SAP, it is assigned green status. In addition, the channel counter in the BDRGIN table is adjusted and incremented by 1 . In case of an error, the status either changes to red or remains yellow. This status change is indicated directly in the result view.
When a specific IDoc is reprocessed successfully, processing of all subsequent IDocs accumulated by serialization will also be resumed.
Serialization occurs in the FORCAM SAP Adapter either at workplace level or at operation level (FIFO principle).

The Reprocess IDoc function is available in SAP with the BD87 transaction. In the implementation of the IDoc Dashboard, a direct call to an SAP function is used rather than the transaction itself.

\subsection*{2.2.6 Logical deletion}

You can use this function with single or multiple IDocs selected in the result view for IDoc(s) with yellow or red signal light status (IDocs already processed and marked with green status cannot be subject to logical deletion). Logical deletion means that the IDocs are merely set to a different numeric status. Their data continue to exist.

The result view is refreshed directly and the new status for the selected IDocs displayed in the appropriate column. The signal light status is either set to red or remains red.

The user is prompted to confirm deletion.

\subsection*{2.3 OUTBOUND IDOCs View}

The OUTBOUND IDOCs view contains an IDoc results view. This hit list is generated on the basis of the filter entries made by the user in the IDoc Dashboard view and the matching IDoc type during execution.

The FORCAM SAP Adapter supports various IDoc outbound types with different data contents. The result view on the screen changes in accordance with the IDoc type filtered. A new entry is generated in the result view for each IDoc segment and references the same IDoc number. For improved legibility, a complete entry including the general IDoc information is created only for the first segment element of a new IDoc as shown in Fig. 9.

The following functions are available to the user for handling individual or multiple IDocs in the OUTBOUND IDOCs view:
- Display IDoc (single selection)
- Production order display (single selection)
- Resend (single selection)
- Delete IDoc (multiple selection)
- Email notification (general function)

Moreover, the following function buttons are available in the OUTBOUND IDOCs view (see section 2.2):
- Select / deselect all elements
- Details
- Sort in ascending order
- Sort in descending order
- Find
- Set filter
- Print
- Views
- Export
- Change layout

\subsection*{2.3.1 Resend IDoc}

This function initiates resending outbound IDocs that had not been transmitted successfully to external systems. You can use this function with each individual IDoc selected in the result view if the IDoc has yellow or red signal light status (IDocs already processed and marked with green status cannot be resent).

Resending involves redetermining the status of the IDoc; this can be verified at any time using the Display IDoc function.
When an IDoc has been transmitted correctly to the recipient, it is assigned green status. If another error occurs, the status changes to red. This status change is indicated directly in the result view.

\subsection*{2.3.2 OUTBOUND IDOC Production Order (IDoc Basic Type /FFMES/f)}

If the user defines the IDoc type /FFMES/f (production order) by the IDoc Dashboard view filter entries, the following data are displayed in the outbound IDoc result view:

Table 7: Screen columns in the OUTBOUND IDOCs results view
\begin{tabular}{|l|l|}
\hline Screen columns & Description \\
\hline 000 & IDoc signal light status: \\
000 & - Red (error) \\
000 & - Yellow (wait; could not yet be processed) \\
& - Green (processed/transmitted) \\
\hline IDoc & Global unique IDoc key \\
\hline Created on & IDoc time stamp in date format dd.mm.yyyy \\
\hline
\end{tabular}
\begin{tabular}{|c|c|}
\hline Basic Type & Basic type of the IDoc for outbound IDocs /FFMES/F (production orders) \\
\hline Status & Numeric IDoc status (for the status overview, see section 2.1) \\
\hline Description & Short description of the IDoc status \\
\hline Segment name & \begin{tabular}{l}
IDoc segment name \\
/FFMES/SVSART (download type, e.g. single download) \\
/FFMES/SAUFTR (order header) \\
/FFMES/SAUFMK (product characteristics) \\
/FFMES/SAFOLG (operations) \\
/FFMES/SAFOTX (operation long text) \\
/FFMES/SAUFFH (production resources/tools) \\
/FFMES/SAFOKO (material components)
\end{tabular} \\
\hline Order & Number of the production order in case of an order-specific IDoc \\
\hline OpAc & The associated operation number to which the IDoc refers (in case of an order-specific IDoc) \\
\hline Record type (message types) & \begin{tabular}{l}
Specifies the record type (message type) of the outbound IDoc. Currently the FORCAM SAP Adapter processes and sends the following message types for production orders: \\
- Order header (AUFTR) \\
- Product characteristics (AUFMK) \\
- Operations (AFOLG) \\
- Operation long text (AFOTX) \\
- Components (AFOKO) \\
- Production resources/tools (AUFFH)
\end{tabular} \\
\hline Workplace & Workplace \\
\hline Direction (of the interface) & \begin{tabular}{l}
Numeric definition of the direction of flow for the bidirectional FORCAM SAP Adapter interface: \\
1 = Outbound IDoc (sending messages from SAP to external systems)
\end{tabular} \\
\hline Serialization & Unique global serialization key of the IDoc and telegram flow \\
\hline
\end{tabular}

For a production order, a separate entry is generated in the result view for each s
tructural element (order, operations, production resources/tools, components) in an IDoc (see Fig. 9). Only the first entry is included into the general information of the IDoc. All subsequent entries include only the segment-specific elements.


Fig. 9: OUTBOUND IDOCs table view with results from execution of the IDoc Dashboard for /FFMES/F

\subsection*{2.3.3 OUTBOUND IDOC Shift Definition (IDoc Basic Type /FFMES/s)}

If the user defines the IDoc basic type /FFMES/s (shift definition) by the IDoc Dashboard view filter entries, the following data are displayed in the outbound IDoc result view:

Table 8: Screen columns in the OUTBOUND IDOCs results view
\begin{tabular}{|l|l|}
\hline Screen columns & Description \\
\hline 000 & \begin{tabular}{l} 
IDoc signal light status: \\
000 \\
Red (error) \\
- Yellow (wait; could not yet be processed) \\
- \\
Green (processed/transmitted)
\end{tabular} \\
\hline IDoc & Global unique IDoc key \\
\hline Created on & IDoc time stamp in date format dd.mm.yyyy \\
\hline Basic Type & \begin{tabular}{l} 
Basic type of the IDoc for outbound IDocs \\
/FFMES/S (shift definition)
\end{tabular} \\
\hline Status & Numeric IDoc status (for the status overview, see section 2.1) \\
\hline Description & Short description of the IDoc status \\
\hline Segment name & \begin{tabular}{l} 
IDoc segment name \\
//FFMES/SHIFT (shift) \\
/FFMES/BREAK (break)
\end{tabular} \\
\hline Number & Consecutive segment number in IDoc \\
\hline Record type (message types) & \begin{tabular}{l} 
Specifies the record type (message type) of the outbound IDoc. \\
Currently the FORCAM SAP Adapter processes and sends the fol- \\
lowing message types for shift definitions:
\end{tabular} \\
\hline
\end{tabular}
\begin{tabular}{|l|l|}
\hline & - Shift (SCHIC) \\
& - Break (PAUSE)
\end{tabular}\(|\)\begin{tabular}{ll|}
\hline Workplace & Workplace \\
\hline Direction (of the interface) & \begin{tabular}{l} 
Numeric definition of the direction of flow for the bidirectional \\
FORCAM SAP Adapter interface: \\
\(1=\) Outbound IDoc (sending messages from SAP to external sys- \\
tems)
\end{tabular} \\
\hline Serialization & Unique global serialization key of the IDoc and telegram flow \\
\hline
\end{tabular}

\subsection*{2.3.4 Selected Master Data View (IDoc Basic Type /FFMES/h)}

If the user defines the IDoc basic type /FFMES/h (selected master data) by the IDoc Dashboard view filter entries, the following data are displayed in the outbound IDoc result view:

Table 9: Screen columns in the OUTBOUND IDOCs results view
\begin{tabular}{|c|c|}
\hline Screen columns & Description \\
\hline \[
\begin{aligned}
& 0 \infty \\
& \infty 00 \\
& 800
\end{aligned}
\] & \begin{tabular}{l}
IDoc signal light status: \\
- Red (error) \\
- Yellow (wait; could not yet be processed) \\
- Green (processed/transmitted)
\end{tabular} \\
\hline IDoc & Global unique IDoc key \\
\hline Created on & IDoc time stamp in date format dd.mm.yyyy \\
\hline Basic Type & Basic type of the IDoc for outbound IDocs /FFMES/H (selected master data download) \\
\hline Status & Numeric IDoc status (for the status overview, see section 2.1) \\
\hline Description & Short description of the explicit IDoc status \\
\hline Segment name & IDoc segment name //FFMES/HRDATA \\
\hline Record type (message types) & \begin{tabular}{l}
Specifies the record type (message type) of the outbound IDoc. Currently the FORCAM SAP Adapter processes and sends the following message types for selected master data: \\
- PERSNR
\end{tabular} \\
\hline Workplace & Workplace \\
\hline Direction (of the interface) & \begin{tabular}{l}
Numeric definition of the direction of flow for the bidirectional FORCAM SAP Adapter interface: \\
1 = Outbound IDoc (sending messages from SAP to external systems)
\end{tabular} \\
\hline Serialization & Unique global serialization key of the IDoc and telegram flow \\
\hline Personnel number & Personnel number \\
\hline First name & First name \\
\hline
\end{tabular}

OUTBOUND IDOCs View
\begin{tabular}{|l|l|}
\hline Last name & Last name \\
\hline Cost center & Cost center \\
\hline
\end{tabular}```

