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SAP – E2R Data exchange

SOLUTION IMPLEMENTED IN PHARMACEUTICAL COMPANY

Data exchange SAP-E2R

Solution implemented in pharmaceutical company

RADWAG designs and implements IT solutions enabling automation of communication between weighing systems operating on the basis of E2R and SAP software - a complex, modular tool intended for company management. The implemented solution allows exchange of order-related data and automatic export of the data processed by E2R to SAP, with no need for human assistance and intervention. RADWAG solution simplifies the production process.

This very document aims to present the system using an example of solution implemented in pharmaceutical company - RADWAG's customer.

Data exchange use

RADWAG-designed automatic data exchange between SAP and E2R systems can be applied wherever the following E2R modules are used: Formulations and Transactions.

Data exchange method

The method is based on data exchange via location in a computer network accessible for both systems - SAP and E2R. E2R MSD, a component of E2R system, is the most important tool - it is responsible for transferring order-related data to and from the E2R database.

The core of the solution is the E2R database. Any data entered into the database is accessible for each E2R client - i.e. it is displayed on PUE5 terminals operated on the weighing workstations. E2R MSD component is responsible for correct transfer of data in the process of communication with SAP system. E2R system stores orders, the operators using particular terminals select those orders that are to be carried out.

Caution. E2R database must operate on a dedicated server or workstation intended for this purpose, wherein the workstation operation must not be disturbed.

Method selection

Key point of the whole data exchange process is the location from which the E2R MSD data synchronisation module acquires data that is to be entered into the E2R database.

Selecting the most appropriate method is one of the most crucial issues. The decision must be made at the design stage while conceptualising means of cooperation between the two systems. While selecting the method it is necessary to cooperate with SAP experts since the E2R system must be adapted to a general configuration at particular customer's premises. E2R configuration is more flexible therefore the E2R can be easier adapted to

SAP, with this more effective results are guaranteed.

While selecting the method, the following options are available:

1. Network location - data required when creating the order in SAP is exported to network location first, next the data is imported from the location via E2R. This method was applied in the very discussed case
2. Webservice.
3. Database view.
4. RFC (Remote Function Call).

Communication protocol

Communication between SAP and E2R systems is carried out via Ethernet protocol. This is both quick and convenient solution offering vast range of possibilities.

Archiving

While entering data to SAP and E2R databases, log of carried out operations is created. Such procedure is used to enable basic audit aiming to judge whether operations performed by both systems are completed successfully or not.

Data exchange process visualisation

Data transfer visualisation, start: the moment when an order is created in SAP system, end: the moment when order is selected by PUE5 terminal operator



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CFR 21

RADWAG-offered solution allowing exchange of data between SAP and E2R systems (and the very E2R system operating by itself) can be configured in a way providing compliance with requirements for software functionality specified by 21 CFR Part 11.

Implementation

Implementation requires cooperation between RADWAG employees and SAP software experts. Within the scope of actions taken on the customer's premises there is software configuration aiming to provide correct operation.

Correct SAP system configuration requires the following conditions to be met:

1. SAP system offers option of creating an order and generating pack of basic information.
 - a. Order number,
 - b. Ingredients list,
 - c. Order size,
 - d. Particular ingredient quantity,
 - e. Permissible deviations and limit values.
2. Apart from basic data any extra information can be used.

3. SAP exports the data directly to a specified location. Applied data format must be selected at the design stage.
4. SAP upon adding the data to SAP's database and after successful completion of order performance transfers data copy to archive location

SAP must be configured by a respective expert.

Correct E2R system configuration requires the following conditions to be met:

1. E2R adds order sent from SAP to E2R database automatically.
2. At the moment of acquiring order-related data from SAP, the data copy is made and transferred to archive directory.
3. Order-related data is accessible from each PUE5 terminal operating in the weighing system.
4. Data on completed order is automatically transferred to local network to enable SAP acquire them as fast as possible.

Additionally it is possible to set frequency of searching for new orders.



Data exchange process visualisation

Data transfer visualisation, start: the moment when the order gets completed by the operator of PUE5 terminal, end: the moment when the data is transferred back to SAP system



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Detailed description of data exchange process

Upon successfully completed implementation and configuration, the option of exchange of data between the systems is ready to be used. The table presents detailed description of the process of data exchange, the description refers to a solution implemented at RADWAG customer's premises.



1 Creating an order in SAP system, entering any data required by the respective E2R software module(s).

2 Creating a data pack (on the basis of an order). The pack must comprise data required at the moment of creating an order.

3 Export of file to a respective network location. Particular network location must be accessible simultaneously for both SAP and E2R.

4 E2R MSD software checks (within specified time intervals) particular location's content. Detection of new data results with its automatic entering into the E2R database.

5 The data is next archived. This is a proof for the fact that the previous steps have been completed successfully and that the SAP system has carried out its task correctly.

6 Data acquired from SAP is visible for each weighing workstation, the data is visible from the moment when it gets saved to the database. The terminal operator's selects from the list an order that is to be carried out.

7 The operator carries out the order on his/her workstation.

8 After completed work, concerning a particular order, and after confirmation of order completion, the data is automatically sent by E2R client to a database.

9 E2R MSD program scans E2R database. When data concerning carried out order gets detected, a new data pack is generated, it comprises all data required by SAP to complete the order.

10 File with data concerning carried out order is placed in a specified network location.

11 The file can be acquired by SAP system.

12 SAP enters the data directly to SAP's database.

13 Copy of the data entered to SAP is made and saved to archive directory. SAP system assigns the order with status completed.



Process of automatic transfer of data between SAP and E2R systems, description based on the implementation realised in pharmaceutical industry.