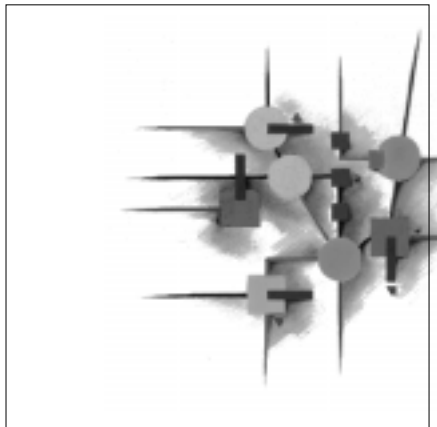


Integration Scenario for ALE Converters



R/3 SYSTEM

Release 3.0



Integration Scenario for	1
ALE Converters	1
Introduction	3
Purpose of this document	3
Related Documents.....	3
ALE converters	3
ALE and external Systems	3
Intermediate Documents	3
External Structure of the Intermediate Document.....	3
Internal Structure of the Intermediate Document	4
Storing User Data.....	6
Machine-readable Description of Intermediate Documents	6
ALE Translator	7
Further Documentation	7

Introduction

Purpose of this document

Related Documents

ALE converters

ALE and external Systems

The component 'Application Linking and Enabling' (ALE) is available as of R/3 Release 3.0. This component can be used to link R/3 Systems that are independent of each other. ALE interfaces can also be used to link external systems to R/3.

ALE does away with the need for various application interfaces. Only one interface is required as ALE uses *intermediate documents* (IDocs) as an universal container for information. These documents are used to upload to or download data from other systems.

While this works seamless when two R/3 systems exchange data there are usually two problems when an external system comes into play:

- Most external systems will not be able to do *remote function calls* (RFC). RFC is the basic communication method used in ALE.
- Most external systems will not understand the IDoc data format.

Intermediate Documents

The basis for data exchange is the intermediate document (IDOC) that is also used by the EDI interface. New IDOC types have been defined for all ALE scenarios in addition to existing EDI applications, and the range of possible applications has been increased.

The intermediate document is a general data container that can contain any desired R/3 application data. In the following, the structure of R/3 tables used for the physical storage of intermediate documents will be referred to as the external structure, the description of the structure of the application data contained in these tables will be referred to as the internal structure of the intermediate document.

External Structure of the Intermediate Document

An intermediate document consists of the three following record types:

- Control record
- Data records
- Status record

The control record is identical for all intermediate documents. The contents of a control record provides unique identification of an intermediate document. It contains information on message type, both sender and recipient ids as well as other technical information.

Data records consist of an administrative component and a data component or segment. The administrative components contains information that uniquely identifies a segment, such as allocation to an intermediate document, segment name, segment number and hierarchy level. The data segment is 1,000 bytes long and is used as a container for user data.

The status records detail the various stati an intermediate document has featured during its transfer from the application to the target system and vice versa. Unlike in EDI, status records in ALE are not transmitted with the IDOC. They are maintained by the R/3 system as IDOCs are created, processed or received from outside the system.

You can call a detailed description of record types in the R/3 System. Proceed as follows: 'Tools -> [Administration](#); Administration -> Process technology; [IDoc -> IDoc Basis](#); Documentation -> Record types¹. An edited [version of this description is available in an additional document \(we61.doc\)](#).

Internal Structure of the Intermediate Document

An intermediate document is identified by the sequence of certain segments or segment groups. The intermediate document type contained in the control record implies a defined segment hierarchy. Usually, a segment group consists of a header segment (e.g. general vendor data) followed by detail segments (e.g. bank details of the vendor) at the next hierarchy level.

¹Corresponds to transaction [WE61](#).

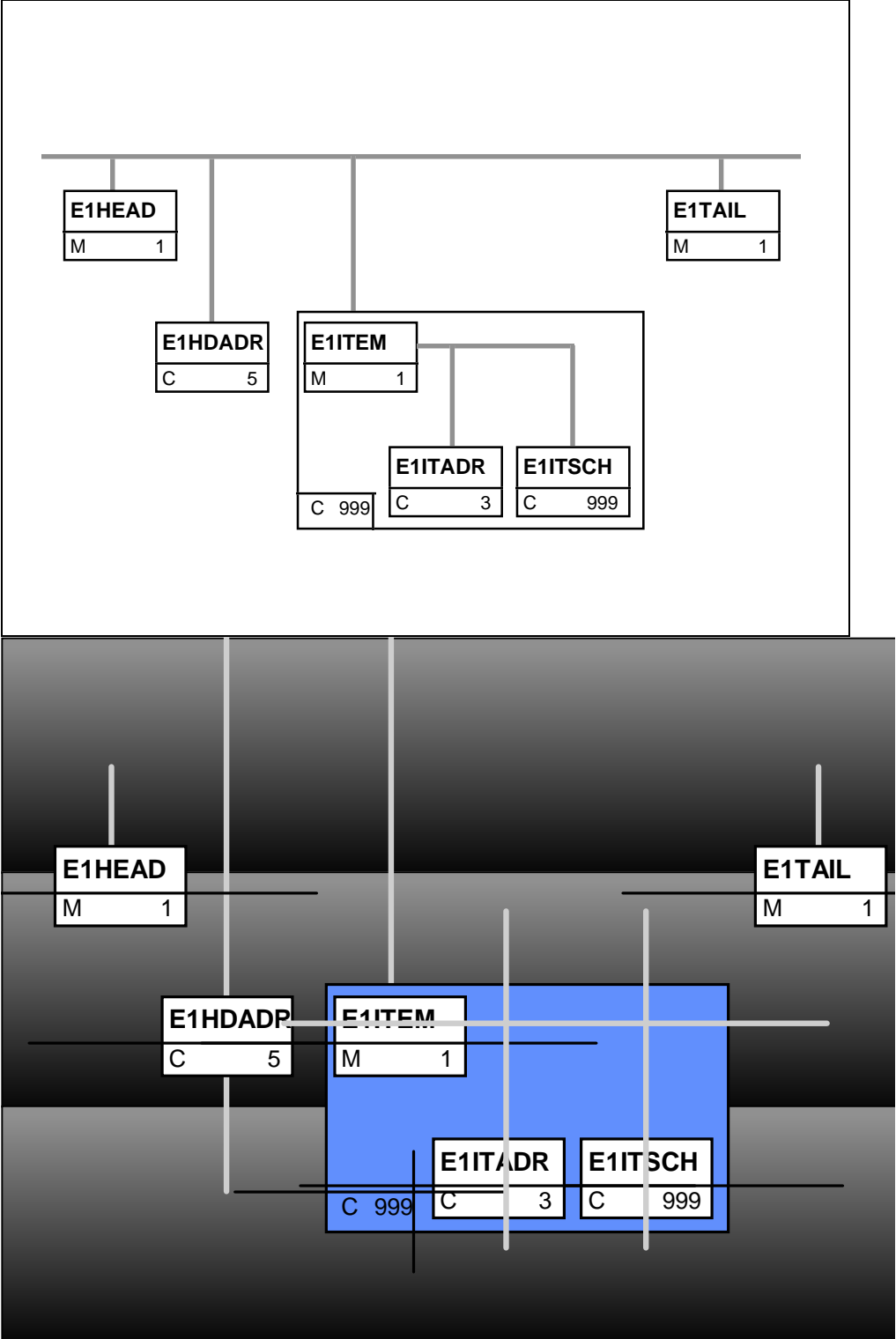


Figure 1 Internal structure of an intermediate document

A definition contained in the segment hierarchy specifies whether an element (segment, respectively segment group) must be on-hand or not and how often it may appear. In Figure 1, all mandatory segments are identified by an 'M', all optional segments are identified by 'C'. The numbers specify the maximum frequency of the elements. The intermediate document used in the example, always commences with an E1HEAD segment. This can be followed by a maximum of five E1HADR segments. The segment group contained in the inner rectangle is also optional. It always commences with an E1ITEM segment that may be followed by other optional segments. The intermediate document is completed by an E1TAIL segment.

You can call a detailed description of all intermediate documents in the R/3 System. Proceed as follows: 'Tools -> [Administration](#); Administration -> Process technology; [IDoc -> IDoc Basis](#); Documentation -> [IDoc types](#)'². In this description, you will also find information on the uses of intermediate documents, and the data contained in individual segments.

Storing User Data

The R/3 repository contains information on field sequences and attributes of each segment. This defines the structure of the user data in the individual segments. The segment name is defined in the administrative component of a data record and thus implies how the respective data component is to be interpreted.

You can call a detailed description of all segments in the R/3 System. Proceed as follows: 'Tools -> [Administration](#); Administration -> Process technology; [IDoc -> IDoc Basis](#); Documentation -> [Segments](#)'³.

Machine-readable Description of Intermediate Documents

You can obtain a machine-readable description of intermediate documents through 'Tools -> [Administration](#); Administration -> Process technology; [IDoc -> IDoc Basis](#); Documentation -> [IDoc types \(Parser\)](#)'⁴ ~~Mit der Transaktion WE63~~. This description contains the following information:

- Record structure of intermediate documents
- Segment hierarchy of intermediate documents
- Field information on all segments

This description is suitable for processing by other programs. Translator programs that feature their own repository can use this information. A syntax description is available in an additional document.

²Corresponds to transaction [WE60](#).

³Corresponds to transaction [WE62](#).

⁴Corresponds to transaction [WE63](#).

ALE Translator

Similar to EDI subsystems, it is advisable to use products when working with ALE, that

- can convert IDocs into any desired structure used by the Non-SAP system
- can take on communication management of functions such as establishing links, restart,....

Such translators are not offered by SAP. It is intended to provide SAP certification for appropriate products, and to thus guarantee functioning communication via the ALE interface and translator to SAP customers. During certification the following criteria are tested:

- Can the translator automatically import IDoc structure descriptions into its repository?
- Can the translator import an intermediate document from R/3, and interpret the data according to its repository data?
- Is the mapping functionality of the translator sufficient? This test is run using a benchmark example.
- Is the translator capable of transferring an intermediate document created in this way to R/3?

Further Documentation

The following files contain documents that are referred to in the above text or that can be used to obtain more detailed information:

`we61.doc` : detailed description of fields contained in the control record, data record and status record. This is the edited version of transaction `WE61`.

`syntax.doc`: syntax of the machine-readable intermediate document description output by transaction `WE63`.

`bcdwbrin.hlp`: R/3 help file for RFC

`alekap4.doc` : an excerpt from the ALE documentation that contains detailed information on processing imported and exported data as well as on monitoring.