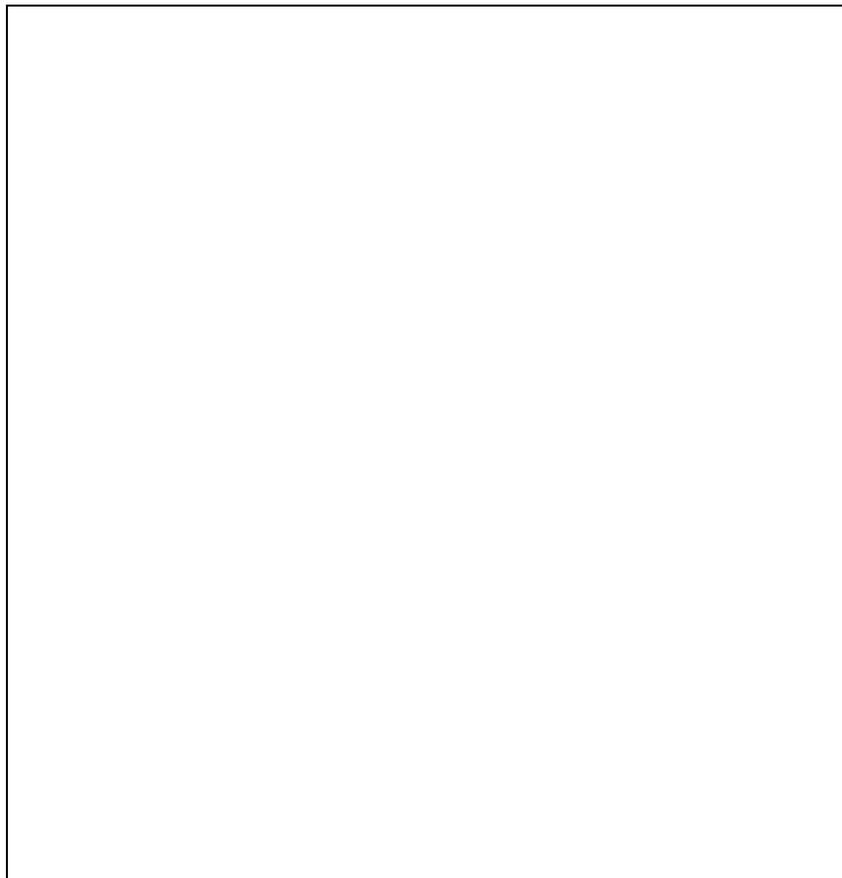


# **Message handbook for Ediel**

## **Functional Description**



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CONTENT

<b>1.</b>	<b>INTRODUCTION.....</b>	<b>5</b>
1.1	EDIEL .....	5
1.2	EDIEL - NORDIC FORUM .....	5
1.3	ENHANCEMENTS OF THE EDIEL STANDARDS.....	6
1.4	UN/EDIFACT .....	6
<b>2.</b>	<b>QUALITY ASSURANCE.....</b>	<b>8</b>
2.1	VERSION NUMBER .....	8
2.2	CORRECTIONS FROM EARLIER VERSIONS .....	8
2.3	REFERENCES .....	11
<b>3.</b>	<b>IMPLEMENTATION GUIDES AND MESSAGE TYPES.....</b>	<b>12</b>
3.1	THE USE OF STANDARD MESSAGES IN EDIFACT .....	13
3.2	GENERAL DESCRIPTION OF THE DELFOR MESSAGE.....	14
3.3	GENERAL DESCRIPTION OF THE MSCONS MESSAGE.....	15
3.4	GENERAL DESCRIPTION OF THE QUOTES MESSAGE .....	16
3.5	GENERAL DESCRIPTION OF THE SLSRPT MESSAGE.....	17
3.6	GENERAL DESCRIPTION OF THE REQOTE MESSAGE .....	18
3.7	GENERAL DESCRIPTION OF THE PRODAT MESSAGE .....	19
3.8	GENERAL DESCRIPTION OF THE APERAK MESSAGE .....	20
<b>4.</b>	<b>TERMS AND NOTATION .....</b>	<b>21</b>
4.1	TERMS .....	21
4.2	NOTATION .....	21
<b>5.</b>	<b>EDIEL INTERCHANGE AGREEMENT .....</b>	<b>23</b>
	<b>INTRODUCTION TO THE EDIEL MODEL EDI AGREEMENT .....</b>	<b>23</b>
	<b>ARTICLE 1: OBJECT AND SCOPE.....</b>	<b>23</b>
	<b>ARTICLE 2: DEFINITIONS.....</b>	<b>23</b>
	<b>ARTICLE 3: VALIDITY AND FORMATION OF CONTRACT .....</b>	<b>24</b>
	<b>ARTICLE 4: ADMISSIBILITY IN EVIDENCE OF EDI MESSAGES.....</b>	<b>24</b>
	<b>ARTICLE 5: PROCESSING AND ACKNOWLEDGEMENT OF RECEIPT OF EDI MESSAGES.....</b>	<b>24</b>
	<b>ARTICLE 6: SECURITY OF EDI MESSAGES .....</b>	<b>25</b>
	<b>ARTICLE 7: CONFIDENTIALITY AND PROTECTION OF PERSONAL DATA.....</b>	<b>25</b>
	<b>ARTICLE 8: RECORDING AND STORAGE OF EDI MESSAGES .....</b>	<b>26</b>
	<b>ARTICLE 9: OPERATIONAL REQUIREMENTS FOR EDI .....</b>	<b>26</b>
	<b>ARTICLE 10: TECHNICAL SPECIFICATIONS AND REQUIREMENTS .....</b>	<b>27</b>
	<b>ARTICLE 11: LIABILITY.....</b>	<b>27</b>
	<b>ARTICLE 12: DISPUTE RESOLUTION .....</b>	<b>27</b>
	<b>ARTICLE 13: APPLICABLE LAW.....</b>	<b>28</b>
	<b>ARTICLE 14: EFFECT, MODIFICATIONS, TERM AND SEVERABILITY.....</b>	<b>28</b>

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<b>TECHNICAL ANNEX</b> .....	<b>28</b>
REGISTRATION.....	28
APPROVED MESSAGES .....	28
COMMUNICATION PROTOCOL.....	28
USE OF ACKNOWLEDGEMENTS AND TIME LIMITS .....	29
<b>6. IMPORTANT RELATIONSHIPS BETWEEN THE MESSAGE TYPES</b> .....	<b>30</b>
6.1 TIME ZONES USED BY NORD POOL ASA.....	30
6.2 MEASUREMENT UNIT QUALIFIER FOR POWER AND ENERGY .....	30
6.3 SPECIAL CONDITIONS FOR EACH COUNTRY .....	30
6.4 DATE FORMAT .....	31
6.5 USE OF PROCESSING START/END DATE.....	31
6.6 USE OF TIME ZONES .....	32
6.7 DIRECTION .....	32
6.8 DECIMAL PLACES AND ROUNDING ERRORS .....	33
6.9 NUMBER OF DIGITS (METER CHARACTERISTIC).....	33
6.10 IDENTIFICATION OF PARTIES IN THE NAD SEGMENT .....	33
6.11 USE OF THE CNT SEGMENT.....	34
6.12 CODES AND QUALIFIERS .....	34
6.13 DATA ELEMENTS CLASSIFIED AS OPTIONAL .....	35
<b>7. SYNTAX AND SERVICE MESSAGES</b> .....	<b>36</b>
7.1 INTERCHANGE STRUCTURE .....	36
7.2 EDIFACT - CHARACTER SET .....	37
7.3 NUMERIC VALUES .....	38
7.4 COMPRESSING OF DATA ELEMENTS .....	39
7.5 SECURITY FOR MESSAGES.....	39
<b>8. SERVICE SEGMENTS</b> .....	<b>41</b>
8.1 UNA.....	41
8.2 UNB.....	42
8.3 UNZ.....	44
8.4 UNH.....	44
<b>9. ADDRESSING WITHIN EDIEL</b> .....	<b>45</b>
<b>10. THE EDIFACT CONTRL MESSAGE</b> .....	<b>46</b>
10.1 SEGMENT TABLE .....	46
10.2 DESCRIPTION OF SEGMENTS USED .....	47
10.3 DETAILED DESCRIPTION OF THE CONTRL MESSAGE .....	48
<b>11. COMMUNICATION</b> .....	<b>51</b>
11.1 X.400.....	51
11.2 SMTP .....	51
11.3 FTP.....	51
11.4 TIME SYNCHRONISATION.....	51
11.5 INTERCHANGE SIZE.....	51
11.6 EXTRA CHARACTERS IN BODY PARTS .....	51
<b>12. DICTIONARY</b> .....	<b>53</b>
<b>APPENDIX A GENERIC PRODUCT CODES</b> .....	<b>54</b>
A.1 ABOUT PRODUCT CODES .....	54
A.2 EAN PRODUCT CODES.....	54
A.3 ADDITIONAL PRODUCT CHARACTERISTICS.....	55
<b>APPENDIX B ADDRESSING WITHIN EDIEL</b> .....	<b>56</b>
B.1 BASIC PRINCIPLES.....	56

B.2 ADDRESSING IN THE UNB SEGMENT ..... 57

## **1. INTRODUCTION**

The purpose of this Message Handbook for Ediel is to ensure that information can be sent between parties in the power industry, in different countries, based on the same framework. The Message Handbook contains Implementation Guides for commonly-used message types in the power industry and this Functional Description, which contains common descriptions for the different Implementation Guides. This includes relationships between the different message types, use of codes and code lists, special conditions between the countries (such as the use of time zones), terms and notation, use of header and trailer segments (UNB and UNZ), etc.

### **1.1 Ediel**

The Nordic power industry is a market with a turnover of around 350 billion kilowatt-hours with a value of approximately 25 billion US-dollars. Finland, Norway and Sweden have deregulated the power industry. For Norway and Sweden a common power exchange, Nord Pool ASA has been established. Nord Pool ASA is responsible for the administration of the different power markets and the distribution of information to the participants. Denmark has started the deregulation process, but has not progressed as far as the other countries. As a result of deregulation, a multinational company can buy its power from one supplier for all installations in the Nordic countries, a Swedish company can buy power in Finland and vice versa and a Norwegian company can buy all or parts of the needed power on the power exchange. Deregulation has increased the trade with electrical power and increased the need for metering and agreements between the participants. Furthermore, this has given a focus on EDI (Electronic Data Interchange) as a tool for handling the increased need for information exchange.

### **1.2 Ediel - Nordic Forum**

To deal with the increased need for the exchange of information between different participants in the power industry, the Nordic countries have established the Ediel Forum. The Forum was established in autumn 1995. The scope of the Forum is to standardise the use of EDI based on the UN/EDIFACT standard in the Nordic power industry. Ediel is intended to cover all needs for interchanging data between participants and trade organisations in the power industry, both domestically and internationally. The Forum will also look into related areas such as standards for communications and security.

Ediel is an organisation with permanent members from the system operators in each country and the Power exchange Nord pool ASA. This includes the following organisations:

- Nord Pool ASA
- Svenska Kraftnät, Sweden
- Statnett SF, Norway
- Eltra, Denmark
- Elkraft, Denmark
- Fingrid, Finland

Other members can be found on Ediel's WEB-page [www.ediel.org](http://www.ediel.org).

The Ediel organisation continues to work towards the standardisation of EDI-messages, communication, security etc. in the power industry, predominantly in the Nordic countries. Ediel is responsible for the documentation and further maintenance. The work covers the following:

- Production of good quality documentation.
- Having knowledge about the parties using the documentation.
- Providing necessary support and help to the users of the documentation, so that the documentation can be used in the correct way.
- Maintenance of the documentation as EDIFACT develops and in response to user-requests.

Routines and procedures will be established to take care of the responsibility to:

- Registration of users of the documentation.
- Identifying and dealing with changes in user-demands and requirements
- Incorporating changes and revisions to the published documentation.
- Ensuring access to updated basic material, for instance the EDIFACT directories that are the basis for the documentation.

### **1.3 Enhancements of the Ediel standards**

To have an optimal solution for the exchange of data, Ediel continues to examine and develop technical and economical improvements for the exchange of information. New methods may be defined and tested in projects under Ediel's direction or in bilateral or national projects. The new solutions will become a part of the Ediel standard when Ediel has approved the new solution.

### **1.4 UN/EDIFACT**

Ediel will use the international standard UN/EDIFACT as the basis for message types when describing the information interchanged between participants in the power industry. Below is a short description of the UN/EDIFACT standard.

When data is interchanged between different parties by tele-transmission methods, a common "language" shall be used with an agreed mode of expressing it, i. e. common protocols, message identification, agreed abbreviations or codes, etc. If a universally-accepted standard

is not used, the "language" has to be agreed bilaterally between each pair of interchange partners. Taking into account the large number of parties needing to exchange data and the ever increasing number of potential users of tele-transmission techniques, it is obvious that such a bilateral approach is not viable. Besides using compatible systems, interchange partners should follow uniform rules with respect to communication procedures which include the types of messages acceptable, identification of parties, reference to previously agreed protocols or agreements on character set, language, transliteration and interchange structure.

The principles mentioned above led to the development of the United Nations Electronic Data Interchange for Administration, Commerce and Transport (UN/EDIFACT) syntax rules and standard messages. The UN/EDIFACT comprises a set of internationally agreed standards, directories and guidelines for the electronic interchange of structured data and, in particular, that related to trade in goods and services between independent, computerised information systems. Recommended within the framework of the United Nations, the rules are approved and published by UN/ECE in the United Nations Trade Data Interchange Directory (UNTDID) and are maintained under agreed procedures.

## **2. QUALITY ASSURANCE**

This document is written by EdiSys AS on behalf of Ediel. Members of the Ediel-organisation have taken part in its development throughout.

The present document has the following status:

- For implementation

### **2.1 Version number**

The Functional description and the Implementation Guides will have 2 levels of version numbering. This will be Version and Release. In addition there will be a Revision number.

- The Version number (first number) will be updated when there have been major changes like new versions of the message type.
- The Release number will be updated when there have been small changes to the IG, like adding new segments, new data elements etc. within the EDIFACT directory. These changes shall not influence existing implementations.
- The Revision number will be updated when there have been minor changes, like correction of examples, adding new codes etc. These changes shall not influence existing implementations.

### **2.2 Corrections from earlier versions**

In addition to minor text corrections the following changes have been made to this version of the Functional description:

#### ***Corrections from version 2.3.H:***

- An Ediel interchange agreement is added to chapter 5.

#### ***Corrections from version 2.3.G:***

- A new appendix A containing generic product codes is added.
- Chapter 9 is changed and the main content is moved to appendix B.

#### ***Corrections from version 2.3.F:***

- Chapter 11.2, SMTP is extended.

#### ***Corrections from version 2.3.E:***

- A new chapter 9, Addressing within Ediel is added.
- Chapter 4, Terms and notation, is updated with the term Routing address.
- Chapter 8.2, UNB, is updated with a note referencing the new chapter 9.

#### ***Corrections from version 2.3.D:***

- Chapter 6.4 is expanded with some explanatory text.
- A new chapter 10.6 is added (Extra characters in body parts)

***Corrections from version 2.3.C:***

- A new chapter 6.2 is added - Measurement unit qualifier for power and energy
- A note is added to chapter 6.4 - Date format, stating that the principle for how to specify the last hour of a day will be changed from hour 24 to hour 00 the next day.

***Corrections from version 2.3.B:***

- A new chapter 6.8 is added - Number of digits (meter characteristic)
- A note is added to chapter 6.9 with a reference to the PRODAT IG.

***Corrections from version 2.3.A:***

- Chapter 2.1 is changed to be more in accordance to practice.
- Chapter 11 is updated with new Finnish text.

***Corrections from version 2.2.2:***

- A new chapter 1.3 is added - enhancements of the Ediel standards.
- Chapter 2.1 is changed to be more in accordance to practice.
- A note is added to chapter 3.
- A note is added to chapter 3.7.
- A new chapter 6.1 is added - time zones used by Nord pool ASA.
- The description of the use of time zones is changed.
- A new chapter 6.4 is added - use of processing start/end date.
- Chapter “6.5, Replacement of messages sent earlier is removed”.
- A new chapter 6.7 is added - decimal places and rounding errors.
- Codes and qualifiers are specified to be case sensitive.
- A new chapter 6.11 is added – data elements classified as optional.
- A description of the use of decimals in the CNT segment is added.
- A summary of the report from the security project is added.
- The classification of data element S002 0007, S003 0007 and 0026 in UNB is changed.
- The definition of qualifier “ZZ” in the UNB addresses is changed.
- The restrictions in the use of the 3. Data element in the sender’s UNB-address is removed.
- The classification of data element S009 0057 in UNH for CONTRL is changed.
- It is stated that the message Id. in UNH could have other values than a sequence number.
- The code list for data element 0083 in UCI for CONTRL is changed.
- A note is added to chapter 9.
- A new chapter 10.3 is added.
- A new chapter 10.4 is added.
- A new chapter 10.5 is added.
- Chapter 11 is updated with new Finnish text.

***Corrections from version 2.2.1:***

- The rules earlier specified for the “Eltra area” is not valid for Denmark.

***Corrections from version 2.1.0:***

- It is opened for use of EDIFACT syntax version “3” and the character set UNOC.

- Data element S002 0008 in the UNB segment should only be used if necessary.
- The description of “Direction” is changed.
- The description of “Parties in the NAD segment” is changed.
- The description of “Encryption” is changed.
- New “References” are added.
- Special communication rules are added for Denmark in chapter 6.1, 7.2, 7.5 and 10.1
- The time zone used in Norway is changed to "standard time" (CET- Central European Time) all the year.
- The description of the use of code “ZZ” in segment UNB is changed for both sender and recipient.

## 2.3 References

The Ediel Message handbook is based on the following documents.

- [1] **Norsk veiledning i bruk av EDIFACT**, version 2.0, November 1991 with addition of January 1994.
- [2] **UN/EDIFACT Draft directory**, D.96A
- [3] **UN/EDIFACT Draft directory**, D.97A
- [4] **Syntax and service report message (CONTRL)**, TRADE/WP.4/R.1186, 8 January 1996
- [5] **ISO 9735**, version 2, 1990.11.01
- [6] **Security for Computer Networks**, D. Davis and W. Price, John Wiley & Sons, 2. edition, 1989.
- [7] **EDIINT**, draft-ietf-ediint-req,  
<http://www.ietf.org/html.charters/ediint-charter.html>
- [8] **S/MIME MIME-based Secure EDI**, draft-ietf-ediint-as 1,  
<http://www.imc.org/smime-pgpmime.html>
- [9] Ediel **WEB-site**, <http://www.ediel.org/>
- [10] RFC 822, The standard for the format of ARPA internet text messages,  
<ftp://ftp.rfc-editor.org/in-notes/> or <http://www.rfc.dk/>
- [11] RFC 1521, Mime, part one, <ftp://ftp.rfc-editor.org/in-notes/> or <http://www.rfc.dk/>
- [12] RFC 1522, Mime, part two, <ftp://ftp.rfc-editor.org/in-notes/> or <http://www.rfc.dk/>

### 3. IMPLEMENTATION GUIDES AND MESSAGE TYPES

The Message handbook for Ediel consists for the time being of the following message types:

- Delivery schedule, which is information sent before the power consumption has taken place. EDIFACT Message type is DELFOR.
- Metered services consumption reports, which are sent after the power consumption has taken place. EDIFACT Message type is MSCONS.
- Quotes, used for quotation in the regulation market towards the system operators and in the spot market towards the power exchange Nord Pool ASA. EDIFACT Message type is QUOTES.
- Sales data report, used for price information from the Power Exchange and the System Operators. EDIFACT Message type is SLSRPT.
- Acknowledgement on application level. EDIFACT Message type is APERAK.
- Request for quotation used to send general information from the Power Exchange to the participants about areas. In addition, the message can be used to send legal areas for individual participants. EDIFACT Message type is REQOTE.
- Product data, used for submission of master data regarding end users. EDIFACT Message type is PRODAT.

The following message types are under development:

- Invoice. EDIFACT Message type is INVOIC.
- Request for document. EDIFACT Message type is REQDOC.
- Infrastructure Condition Message. Information about components in the grid that are taken down because of faults or repair. Ediel has sent a new message request to EDIFACT for the message type INFCON.

**Note:** Each party's EDI system must be able to handle at least two versions of Ediel Implementation Guides and EDIFACT catalogues to be able to handle changes made to the Ediel standard.

### 3.1 The use of standard messages in EDIFACT

This message handbook is based on EDIFACT Standard Messages. Some of the message types could not cope with the information demand required by the power market. This has led to expansion of some standard EDIFACT message types. The following changes have been made:

EDIFACT-message:	Implementation guide:	Changes:
DELFOR	Delivery schedule message	<ul style="list-style-type: none"> <li>• CUX, SG. 8 New segment</li> </ul>
MSCONS	Metered services consumption report	<ul style="list-style-type: none"> <li>• MEA, SG. 9 New segment</li> <li>• CUX, SG. 9 New segment</li> </ul>
SLSRPT	Sales data report	<ul style="list-style-type: none"> <li>• MKS, SG. 0 New segment</li> <li>• SG. 4 Extended from 5 to 99 repetitions</li> <li>• FTX, SG. 5 New segment</li> <li>• PRI, SG. 7 Removed</li> <li>• SG. 8 New segment group</li> <li>• PRI, SG. 8 New segment</li> <li>• CUX, SG. 8 New segment</li> </ul>
REQOTE	Request for quotation	<ul style="list-style-type: none"> <li>• SG. 8 Extended from 10 to 50 repetitions</li> <li>• SG. 33 Extended from 100 to 999 repetitions</li> </ul>

## 3.2 General description of the DELFOR message

### 3.2.1 Delivery schedule message

The message type used for Delivery schedule is based upon the EDIFACT message DELFOR. The EDIFACT standard message is expanded with a CUX-segment in segment group 8.

### 3.2.2 Functional Definition

The Delivery schedule is a message between parties in the power industry giving product requirements regarding details for short term delivery instructions and/or medium to long term product/service forecast for planning purposes according to conditions set out in a contract or order.

### 3.2.3 Principles

The delivery schedule message is used to:

- specify delivery schedules requested by one party
- define the aspects that guarantee a perfect synchronisation between the parties
- provide information allowing one party to plan for future requirements in order to produce and deliver power in the most economical way.

The information is transferred as:

- General information
- Description of the serial Id.
- Information of the quantity and time period

### 3.3 General description of the MSCONS message

#### 3.3.1 Metered Services Consumption Report message

The message type used for the Metered Services Consumption Report is based upon the EDIFACT message MSCONS. The message description is taken from the D.97A Directory since this is the first EDIFACT Directory where MSCONS is present. The segment descriptions, data element descriptions, code lists, etc. are taken from the D.96A Directory, as are the rest of the IG's from Ediel.

The EDIFACT message is expanded with a MEA and CUX segment in segment group 9.

#### 3.3.2 Functional Definition

The Metered Services Consumption Report is a message sent between parties in the power industry, providing consumption and/or associated technical information at location(s) for product(s) or service(s) where the supply is metered.

#### 3.3.3 Principles

The following principles apply to the Metered Services Consumption Report:

- At least one delivery party (premise) shall be identified per message.
- Each Metered Services Consumption Report will define the period of time for which the details contained are valid.
- A Metered Services Consumption Report may be used to provide consumption information which may directly relate to other business functions, e. g. invoicing or process control.
- Metered Services Consumption Reports will be provided for premises as defined by trading partners.
- Locations, products and/or services, and meters shall be identified wherever possible within the report using codes to facilitate processing.
- The Metered Services Consumption Report may be transmitted at any time and may be related directly to either a delivery(ies) and/or invoice(s).
  - A Metered Services Consumption Report when used to support the financial information contained in an invoice may relate to one invoice only.
  - A Metered Services Consumption Report when used to indicate consumption or quality information may relate to one or many delivery parties (premises).

The information is transferred as:

- General information.
- Description of the serial Id.
- Description of the product.
- Information regarding the quantity and time period.

### 3.4 General description of the QUOTES message

#### 3.4.1 Functional Definition

A message which provides potential sellers with the ability to provide price, delivery schedule, and other conditions for potential sales of goods or services.

In the power industry the quote message is used for quotation in the regulation market towards the system operators and in the spot market towards the power exchange Nord Pool ASA.

#### 3.4.2 Principles

- A potential seller may offer one or more goods items or services.
- A quotation may refer to goods items or services related to one or more delivery schedules, call-offs, etc.
- A quotation for cross border transactions may contain additional information for customs and/or statistical purposes.

The information is transferred as:

- General information including dates, periods and currencies
- Description of area or power plant
- Time period, quantity and price for each bid

### **3.5 General description of the SLSRPT message**

#### **3.5.1 Functional Definition**

A message to enable the transmission of sales data related to products or services, such as corresponding location, period, product identification, pricing, monetary amount, quantity, market sector information and sales parties. It enables the recipient to process the information automatically and use it for production, planning, marketing, statistical purposes, etc.

In the power industry the Sales data report message is used for price information from the Power Exchange and the System Operators.

#### **3.5.2 Principles**

The message intent is to provide sales information for one or more locations for a series of products within a specified time period.

The message is transmitted either from a System Operator or from the Power Exchange to participants in the power industry. It allows the recipient to know for a specific product the:

- Location of the sale.
- Period in which it was sold.
- Product identification.
- Product selling price, quantity and value of the sales.
- Additional Identification of the products such as promotional flags, product group or family identification and internal identification numbers.
- Periodical Turnover of a specified location.
- Global specified product sales, i. e. total sales of a product in all locations.
- Sales parties identification.

The information is transferred as:

- General information including dates, periods and currencies.
- Description of area, contracts etc.
- Time period, quantity and price for each market.
- Information about the turnover, totally, and for each party.

### 3.6 General description of the REQOTE message

#### 3.6.1 Functional Definition

A message which provides potential buyers with the ability to solicit price, delivery schedule, and other conditions from sellers of goods or services.

In the power industry the Request for quote message is used to send general information from the Power Exchange to the participants about areas where bids can be placed. In addition the message can be used to send legal areas for individual participants.

#### 3.6.2 Principles

The message intent is to provide information for one or more areas within a specified time period.

The message is transmitted from the Power Exchange to participants in the power industry. It allows the recipient to know:

- Maximum and minimum prices.
- Legal areas.
- Information about bidding classifications.
- The time period of the bidding classification.
- Information about which areas are permissible within a bidding classification.

### **3.7 General description of the PRODAT message**

#### **3.7.1 Functional Definition**

A message to submit master data - a set of data that is rarely changed - to identify and describe products a supplier offers to his (potential) customer or buyer. This information of long validity includes technical and functional product description but not commercial terms and conditions. This message can be used as well to update the information on a previously sent PRODAT message.

#### **3.7.2 Principles**

This message provides product identification and description on the full or partial range of deliverable goods a supplier offers to his customers. It might be offered to a single customer, a multitude of customers and to agents as well.

The information enables customers to select goods according to appropriate needs. To achieve this the subsequent details may be provided on specified goods:

- products characteristics
- technical data
- utilisation description
- utilisation requirements
- handling information

The information may be provided either structured or in free format.

This message provides capability to identify technical information being mandatory for ordering. Descriptive and, or identifying parts of this message can be copied into orders as required.

The information is transferred as:

- General information
- Reference to end-user
- Information about end-users Serial Id.

### 3.8 General description of the APERAK message

#### 3.8.1 Functional Definition

The function of this message is:

- a) to inform a message issuer that his message has been received by the addressee's application and has been rejected due to errors encountered during its processing in the application.
- b) to acknowledge to a message issuer the receipt of his message by the addressee's application.

#### 3.8.2 Principles

A message, (i. e. DELFOR, MSCONS, etc.) being first controlled at system level (CONTRL) to detect syntax errors and to acknowledge its receipt is then transmitted to the application process to be processed.

If an error is detected at the application level, which prevents its complete processing, an APERAK message is sent to the original message issuer giving details of the error(s) encountered. If no error has been detected and when an acknowledgement is necessary (e. g. when no dedicated answer to the original message exists) an APERAK message is sent specifying the reasons for acknowledgement.

In case of an application error, the APERAK message will need manual processing, e. g. when the underlying reason is a programming error. In case of acknowledgement the APERAK message may be automatically or manually processed at the recipient's discretion.

The information is transferred as:

- General information
- Reference to received message
- In case of error: Error information

**Note:** If an APERAK message is requested a CONTRL message is not normally necessary.

## 4. TERMS AND NOTATION

The following terms and notations will be used in the Implementation Guides in the Message Handbook for Ediel.

### 4.1 Terms

CET	Central European Time = UTC + 1
CEST	Central European daylight Saving Time = UTC + 2
GMT	Greenwich Mean Time, same as UTC
UTC	Universal Time Coordinated, same as GMT
Normal Time	or Standard Time, UTC + time zone

Routing address      The address used for routing of interchanges. This will be the UNB address inclusive the sub-address in EDIFACT messages and the message address in XML messages.

### 4.2 Notation

#### 4.2.1 Segment groups

Most of the information in an EDIFACT message is organised in segment groups. A segment group consists of different segments containing information of a certain type. A segment group can also consist of other segment groups.

Segment groups are described by the following elements:

Function	The function of the segment group.
Comments	Special comments on the use of the segment group.
Segments in the segment group	A list of the segments that are used in the segment group. The segments listed are described in detail later.

#### 4.2.2 Segments

Segments are described by the following elements:

Function	The function the segment has.
Classification	The segment classification (see below).
Comments	Special comments on the use of the segment.
EDIFACT-segment	A copy of the segment in the way it is described in the D.96A segment directory.
Description	A list of the data elements used in the Implementation guides. Data elements containing codes are normally described with a full list of codes allowed.

#### 4.2.3 Classification

Below there is a list with the classification used:

- M Mandatory, the object must be used to satisfy the demands from EDIFACT.
- R Required, the object must be used to satisfy the demands from Ediel.
- D Dependent, the object must be used in certain conditions.
- A Advised, the object is advised, but is not Required.
- O Optional, the object is Optional.
- N Not recommended, the object is not recommended for use.
- X Not used, the object shall not be used.

Together with the classification there will be a number indicating the maximum number of repeats of the segment or segment group.

## **5. EDIEL INTERCHANGE AGREEMENT**

This chapter describes the rules that apply to electronic data interchange based on the Ediel framework. If not other ways agreed bilaterally, the interchange should take place on the conditions stated in this chapter.

### **INTRODUCTION TO THE EDIEL MODEL EDI AGREEMENT**

It is the intention that the agreement shall function as a standard agreement for the use of electronic data interchange (EDI).

### **ARTICLE 1: OBJECT AND SCOPE**

- 1.1. The 'Ediel Model EDI Agreement', hereinafter referred to as 'the Agreement', specifies the legal terms and conditions under which the parties, conducting transactions by the use of electronic data interchange (EDI), operate.
- 1.2. The Agreement consists of the legal provisions set out in the following and shall be completed by a Technical Annex.
- 1.3. The provisions of the Agreement are not intended to govern the contractual obligations arising from the underlying transactions effected by the use of EDI.
- 1.4. This Agreement is based on the European Model EDI Agreement published by the Commission of the European Communities (94/820/EC) with alterations/additions in the following articles: Introduction, 1.1, 1.3, 1.4, 2.3, 2.6, 5.3, 6.3, 6.4, 9.5, 11.4, 12, 13, 14.1, 14.2, 14.3.

### **ARTICLE 2: DEFINITIONS**

- 2.1. For the purpose of the Agreement, the following terms are defined as follows;
- 2.2. EDI:  
Electronic data interchange is the electronic transfer, from computer to computer, of commercial and administrative data using an agreed standard to structure an EDI message.
- 2.3. EDI message:  
An EDI message consists of data, structured using an agreed standard, prepared in a computer readable format and capable of being automatically and unambiguously processed.
- 2.4. UN/EDIFACT:  
As defined by the UN/ECE, the United Nations rules for electronic data interchange for administration, commerce and transport, comprise a set of internationally agreed standards, directories and guidelines for the electronic interchange of structured data, and in particular, interchange related to trade in goods and services, between independent computerized information systems.

2.5. Acknowledgement of receipt:

The acknowledgement of receipt of an EDI message is the procedure by which, on receipt of the EDI message, the syntax and semantics are checked, and a corresponding acknowledgement is sent by the receiver.

2.6 Ediel

As defined by the Ediel, the rules for electronic interchange of non-on-line data between parties in the electricity market.

**ARTICLE 3: VALIDITY AND FORMATION OF CONTRACT**

- 3.1. The parties, intending to be legally bound by the Agreement, expressly waive any rights to contest the validity of a contract effected by the use of EDI in accordance with the terms and conditions of the Agreement on the sole ground that it was effected by EDI.
- 3.2. Each party shall ensure that the content of an EDI message sent or received is not inconsistent with the law of its own respective country, the application of which could restrict the content of an EDI message, and shall take all necessary measures to inform without delay the other party of such an inconsistency.
- 3.3. A contract effected by the use of EDI shall be concluded at the time and place where the EDI message constituting acceptance of an offer reaches the computer system of the offeror.

**ARTICLE 4: ADMISSIBILITY IN EVIDENCE OF EDI MESSAGES**

To the extent permitted by any national law which may apply, the parties hereby agree that in the event of dispute, the records of EDI messages, which they have maintained in accordance with the terms and conditions of this Agreement, shall be admissible before the Courts and shall constitute evidence of the facts contained therein unless evidence to the contrary is adduced.

**ARTICLE 5: PROCESSING AND ACKNOWLEDGEMENT OF RECEIPT OF EDI MESSAGES**

- 5.1. EDI messages shall be processed as soon as possible after receipt, but in any event, within the time limits specified in the Technical Annex.
- 5.2. An acknowledgement of receipt is not required unless requested.  
  
An acknowledgement of receipt can be requested by specific provision included in the Technical Annex or by express request of the sender in an EDI message.
- 5.3. Where an acknowledgement is required, the receiver of the EDI message to be acknowledged shall ensure that the acknowledgement is sent within one working day of the time of receipt of the EDI message to be acknowledged, unless an alternative time limit has been specified in the Technical Annex.

The receiver of an EDI message requiring an acknowledgement shall not act upon the content of the EDI message until such acknowledgement is sent.

- 5.4. If the sender does not receive the acknowledgement of receipt within the time limit, he may, upon giving notification to the receiver to that effect, treat the EDI message as null and void as from the expiration of that time limit or initiate an alternative recovery procedure as specified in the Technical Annex, to ensure effective receipt of the acknowledgement.

In case of failure of the recovery procedure, within the time limit, the EDI message will definitely be treated as null and void, as from the expiration of that time limit, upon notification to the receiver.

**ARTICLE 6: SECURITY OF EDI MESSAGES**

- 6.1. The parties undertake to implement and maintain security procedures and measures in order to ensure the protection of EDI messages against the risks of unauthorized access, alteration, delay, destruction or loss.
- 6.2. Security procedures and measures include the verification of origin, the verification of integrity, the non-repudiation of origin and receipt and the confidentiality of EDI messages.

Security procedures and measures for the verification of origin and the verification of integrity, in order, to identify the sender of any EDI message and to ascertain that any EDI message received is complete and has not been corrupted, are mandatory for any EDI message. Where required, additional security procedures and measures may be expressly specified in the Technical Annex.

- 6.3. If the use of security procedures and measures results in the rejection of, or in the detection of an error in an EDI message, the receiver shall inform the sender thereof, within the specified time limit.

The receiver of an EDI message which has been rejected, or which contains an error shall not act upon the EDI message before receiving instructions from the sender.

- 6.4. In case a message is distorted due to communication disturbances for which neither of the parties are to blame, the sender is bound by the message provided the receiver did not know or should have known that it was a case of distortion.

**ARTICLE 7: CONFIDENTIALITY AND PROTECTION OF PERSONAL DATA**

- 7.1. The parties shall ensure that EDI messages containing information specified to be confidential by the sender or agreed mutually to be confidential between the parties, are maintained in confidence and are not disclosed or transmitted to any unauthorized persons nor used for any purposes other than those intended by the parties.

When authorized, further transmission of such confidential information shall be subject to the same degree of confidentiality.

- 7.2. EDI messages shall not be regarded as containing confidential information to the extent that such information is in the public domain.
- 7.3. The parties may agree to use a specific form of protection for certain messages such as a method of encryption to the extent permitted by law in either of their respective countries.
- 7.4. Where EDI messages which include personal data are sent or received in countries where no data protection law is in force, and until a relevant Community legislation is implemented, each party agrees as a minimum standard, to respect the provisions of the automatic processing of personal data.

**ARTICLE 8: RECORDING AND STORAGE OF EDI MESSAGES**

- 8.1. A complete and chronological record of all EDI messages exchanged by the parties in the course of a trade transaction shall be stored by each party, unaltered and securely, in accordance with the time limits and specifications prescribed by the legislative requirements of its own national law, and, in any event, for a minimum of three years following the completion of the transaction.
- 8.2. Unless otherwise provided by national laws, EDI messages shall be stored by the sender in the transmitted format and by the receiver in the format in which they are received.
- 8.3. Parties shall ensure that electronic or computer records of the EDI messages shall be readily accessible, are capable of being reproduced in a human readable form and of being printed, if required. Any operational equipment required in this connection shall be retained.

**ARTICLE 9: OPERATIONAL REQUIREMENTS FOR EDI**

- 9.1. The parties undertake to implement and maintain the operational environment to operate EDI according to the terms and conditions of this Agreement, which includes but is not limited to the following:
  - 9.2. Operational equipment  
The parties shall provide and maintain the equipment, software and services necessary to transmit, receive, translate, record and store EDI messages.
  - 9.3. Means of communication  
The parties shall determine the means of communication to be used, including the telecommunication protocols and if required, the choice of third party service providers.
  - 9.5. Codes  
Data element code lists referred to in EDI messages shall include UN/EDIFACT maintained code lists, international code lists issued as ISO international standards and UN/ECE, Ediel code lists or other officially published code lists.  
  
Where such code lists are not available, preference shall be given to the use of code lists published, maintained and ensuring correspondences with other coding systems.

**ARTICLE 10: TECHNICAL SPECIFICATIONS AND REQUIREMENTS**

The Technical Annex shall include the technical, organizational and procedural specifications and requirements to operate EDI according to the terms of this Agreement, which includes but is not limited to the following:

- operational requirements for EDI, as referred to in Article 9, including, operational equipment, means of communication, EDI message standards and codes,
- processing and acknowledgement of EDI messages,
- security of EDI messages,
- recording and storage of EDI messages,
- time limits,
- procedures for tests and trials to establish and monitor the adequacy of the technical specifications and requirements.

**ARTICLE 11: LIABILITY**

11.1. No party to this Agreement shall be liable for any special, indirect or consequential damages caused by a failure to perform its obligations of this Agreement.

11.2. No party to this Agreement shall be liable for any loss or damage suffered by the other party caused by any delay or failure to perform in accordance with the provisions of this Agreement, where such delay or failure is caused by an impediment beyond that party's control and which could not reasonably be expected to be taken into account at the time of conclusion of the Agreement or the consequences of which could not be avoided or overcome.

11.3. If a party engages any intermediary to perform such services as the transmission, logging or processing of an EDI message, that party shall be liable for damage arising directly from that intermediary's acts, failures or omissions in the provision of said services.

**ARTICLE 12: DISPUTE RESOLUTION**

12.1 Any dispute arising out of or in connection with this Agreement, including any question regarding its existence, validity or termination, shall be referred to and finally resolved by the arbitration of a (or three) person(s) to be agreed by the parties, or failing agreement, to be nominated by The International Court of Arbitration in accordance with and subject to the rules of procedure of the Rules of Arbitration of the International Chamber of Commerce.

The Place of arbitration shall be Stockholm and the language shall be English.

Without prejudice to any mandatory national law which may apply to the parties regarding recording and storage of EDI messages or confidentiality and protection of personal data, the agreement is covered by the law of Sweden.

12.2 If the parties are from the same nation and the use of EDI has taken place within this nation, the disputes between the two parties shall be settled under the Rules of

Arbitration of the nation. The applicable Law and the language shall be that of the nation

**ARTICLE 13: APPLICABLE LAW**

This part of the European Model EDI Agreement has been incorporated in Article 12 of this agreement.

**ARTICLE 14: EFFECT, MODIFICATIONS, TERM AND SEVERABILITY**

**14.1 Effect**

The Agreement shall be effective from the date on which the parties starts to exchange messages.

**14.2 Modifications**

This Agreement cannot be changed by the parties.

The parties accept that the Agreement can be modified by Ediel if all the national system operators agree. A modified Ediel Model EDI Agreement will come into force three month after it has been published. The independent transmission system operator is responsible for the distribution of the modified versions of the Agreement.

**14.3 Term**

This Agreement cannot be terminated by the parties as long as electronic messages are exchanged and no other bilateral agreements are in effect.

Termination of the Agreement shall only affect transactions after that date.

Notwithstanding termination for any reason, the rights and obligations of the parties referred to in Articles 4, 6, 7 and 8 shall survive termination.

**14.4 Severability**

Should any Article or part of an Article of the Agreement be deemed invalid, all other Articles shall remain in full force and effect.

**TECHNICAL ANNEX**

**Registration**

All parties shall be registered with name, postal address, contact person, EDI communication address and other parameters required by the national Ediel coordinator, normally the system operator.

**Approved messages**

The EDI communication is governed by the Ediel Message Handbook issued by Ediel. The handbook consists of the Ediel Functional Description and implementation Guides (IG) for the different messages.

The messages shall comply with the rules in national descriptions.

**Communication protocol**

The communication protocol used shall comply with the rules in national descriptions.

**Use of acknowledgements and time limits**

If no national rules or bilateral agreements apply for the time before return of acknowledgments, such as CONTRL and APERAK, the following time limits shall apply:

- Acknowledgement of received message and correct syntax, such as the CONTRL message, shall be sent within one hour of the time of receipt of the EDI message to be acknowledged.
- Acknowledgement of the content of the data, such as the APERAK message, shall be sent within one working day of the time of receipt of the EDI message to be acknowledged.

## 6. IMPORTANT RELATIONSHIPS BETWEEN THE MESSAGE TYPES

### 6.1 Time zones used by Nord Pool ASA

Nord Pool ASA uses "standard time" (CET- Central European Time) all year round. In the summer, during the daylight saving, the period of a day (e. g. for reporting purposes) will be from hour 2300 to hour 2300 and in the winter this period will be from hour 0000 to hour 2400. The day between the winter period and the summer period is transferred with 23 hours (from 0000 to 2300) and the day between the summer period and the winter period is transferred with 25 hours (from 2300 (day 1) to 2400 (day 2)).

### 6.2 Measurement unit qualifier for power and energy

It is advised to use the following rules when sending power and energy values in time series in MSCONS or DELFOR:

- The measure unit qualifiers MWh/h, kWh/h, MVarh/h and kVarh/h are advised not to be used.
- Use MW, kW, MVar or kVar connected to a period of time if sending average power over a period.
- Use MW, kW, MVar or kVar connected to a point in time if sending an instantaneous value or a peak value.
- Use MWh, kWh, MVarh or kVarh connected to a period of time if sending the total energy over a period.

### 6.3 Special conditions for each country

#### 6.3.1 Sweden

##### *Date formats:*

In Sweden the time used is "standard time" (CET- Central European Time) all year round.

##### *Serial Id.:*

In Sweden normally a 17 character long identification. The first five digits make up a Party Id., normally the same as the Party id in "NAD+FR". The last "12" (more or less ) characters can be chosen freely by the sender (FR). The serial Id shall be unique for the sender. A Serial Id. may not contain any blanks or "ääöÅÄÖ".

#### 6.3.2 Norway

In Norway the time used is "standard time" (CET- Central European Time) all year round.

### 6.3.3 Finland

Finland uses UTC by default, but «normal time» (UTC + time zone) can also be used. The time zone is Required for EDI messages both domestically and when sending/receiving messages to/from other countries.

### 6.3.4 Denmark

In Denmark the time used is "standard time" (CET- Central European Time) all year round.

## 6.4 Date format

A period of time is specified using the format code "Z13" in data element C507 2379 in the DTM segment:

Z13      CCYYMMDDHHmm-CCYYMMDDHHmm (Without hyphen)

Where:	CC	Century
	YY	Year
	MM	Month
	DD	Day
	HH	Hour
	mm	Minutes

**Note:** Today the start hour of a day is defined to be "00" and the end hour of a day "24", within Ediel. Most operating systems (e. g. unix) and applications are today using "00" (the next day) as the end hour of a day. From version 4.0 of the Ediel IG's it is planned to use "00" the next day as the end hour of a day. This principle may be used bilaterally and nationally today.

It is advised to develop applications in a way that makes it possible to use both principles.

#### **Example (principle for Ediel IG version 2.x):**

Specifying a hole day and night: 199909080000199909082400  
Specifying the last hour of a day: 199909082300199909082400

#### **Example (principle for Ediel IG version 4.0):**

Specifying a hole day and night: 200009080000200009090000  
Specifying the last hour of a day: 200009082300200009090000

## 6.5 Use of processing start/end date

In several messages (e. g. MSCONS, DELFOR, etc.) the beginning and ending of the processing date/period is required. The period shall be used for control purposes. A message

with a period in the detailed section not within the period in the header section shall be discarded.

## 6.6 Use of time zones

When exchanging messages the Time Zone shall be used. The time zone shall be specified in a separate DTM segment with the code “ZZZ” in data element C507 2005. The Time Zone is specified as the offset to UTC in number of hours. (Format code “805” in data element C507 2379).

If necessary both hours and minutes can be used (Example: “5.5” for India and “-3.5” for Newfoundland). The format can then be used all over the world, including Australia, Newfoundland and India.

It is advised to use UTC+1 when exchanging data between countries unless another time zone is agreed specifically.

**Note:** It is not permitted to send two different time zones within one message, i. e. you cannot send all values for the day when you change Time Zone. In this case you have to split the message into two messages.

**Note:** All dates in a message shall be given with the same time zone. E. g. both “Message date” and “Processing start date” shall be given with the same time zone.

**Note:** The time stamp, as given in composite S004 of the UNB segment for an interchange, is not affected by the time zone.

## 6.7 Direction

The direction is indicated in the messages by the sign of the value. The Ediel Nordic Forum declines to define general rules for how to use direction. It is therefore advised always to specify the use of the direction in national descriptions or in a bilateral Agreement. Below we have tried to make some rules that can be used as a basis for the direction. These rules can be used for most of the message types (i. e. DELFOR, MSCONS and QUOTES). *For messages sent from a System Operator (i. e. SLSRPT), the rules must be opposite:*

- The direction can be seen from the «owner» of the Serial Id. or the first company defined in the Serial Id. or Company 1 (could also be a Network or Constraint area).
- The direction is always seen from the sender of a Quotation (QUOTES).
- In other cases the direction shall be seen from the sender of the message.

## 6.8 Decimal places and rounding errors

In the view of Ediel Nordic Forum the responsibility for rounding accumulative volumes lies with the net owner. However, the subject of rounding and the number of decimal places are being discussed with a view to producing a standard procedure.

## 6.9 Number of digits (meter characteristic)

When sending the meter characteristic “Number of digits” as additional information in PRODAT or MSCONS the number of digits shall be the integer part of the digits in the register.

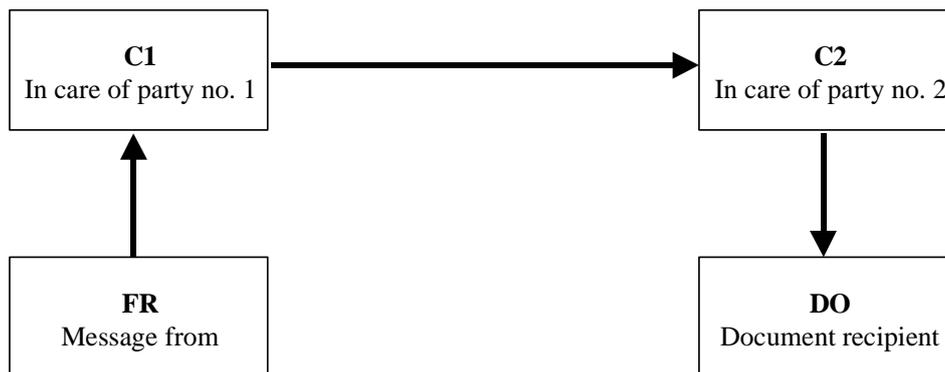
## 6.10 Identification of parties in the NAD segment

The following qualifiers shall be used to identify parties in the NAD-segment in the header section.

**Note:** In the PRODAT message the NAD-segment is also used in the detailed section. A description of how to identify parties in the detailed section can be found in the PRODAT IG.

Country	C082 3039 (Party id identification)	C082 1131 (Code list qualifier)	C082 3055 (Code list responsible)
Norway	Company registration no. from «Foretaks-/Enhetsregisteret» in Norway.	<b>NO3</b> Only for companies registered in «Foretaksregisteret»	<b>82</b> «Enhetsregisteret» in Norway
	Party ID	<b>160</b> Party identification	<b>SM</b> Participant Id at Nord Pool ASA
Sweden	Party ID	<b>160</b> Party identification	<b>SVK</b> Svenska Kraftnät
Finland	Party ID	<b>160</b> Party identification	<b>SLY</b> Finnish Electricity Association
	Party ID	<b>100</b> Enhanced party identification	<b>EDI</b> Other Id. than power plant
Denmark	Party ID	<i>Not used</i>	<b>9</b> EAN (European Article Numbering Association)
Germany	Party ID	<i>Not used</i>	<b>9</b> EAN (European Article Numbering Association)
	Party ID	<i>Not used</i>	<b>60</b> Assigned by national trade agency
All	Party ID	<i>Not used</i>	<b>9</b> EAN (European Article Numbering Association)

Specification of data element 3035 in the NAD segment in segment group 2:



FR *Message from* is the identification of the originator of the data.

DO *Document recipient* is the identification of the receiver of the data.

C1 *In care of party no. 1* is only used if the sender of the EDIFACT message is acting on behalf of another company (Code «FR» in data element 3035 in NAD).

C2 *In care of party no. 2* is only used if the receiver of the EDIFACT message is acting on behalf of another company (Code «DO» in data element 3035 in NAD).

**Note:** C1 and C2 are only used for companies that *act on behalf* of another company and *not* for companies that only make EDIFACT-conversions and report data from another company.

### 6.11 Use of the CNT segment

The CNT segment is a segment by which control totals may be provided by the sender for checking by the receiver. The CNT segment is a part of all Ediel messages that contain data where it is important for the receiver to verify that all data is transferred.

For most of the Ediel messages a net sum for the quantity in the QTY or RNG segment in the detailed section shall be sent. Positive quantities are added while negative quantities are subtracted. For some of the messages (e. g. QUOTES) a net sum for the prices in the PRI segment may also be sent.

**Note:** The sum in the CNT segment must use the same number of digits as the data transferred in the detailed section, to assure that the calculated sum can be matched with sum in the CNT segment.

### 6.12 Codes and qualifiers

Codes and qualifiers used in Ediel are case sensitive. Uppercase is normally used.

### **6.13 Data elements classified as optional**

If the classification of a data element is “O” (Optional) its use shall be bilaterally agreed. It is not required for a receiver to process a data element that is classified as optional.

It is recommended that the receiver should accept data elements or segments that are not mandatory, required, dependent or bilaterally agreed, even if they are marked as “X” (Not used) in the Implementation Guides, although it may not be necessary to process them.

## **7. SYNTAX AND SERVICE MESSAGES**

### **7.1 Interchange Structure**

The Service String Advice, UNA, and the service segments UNB to UNZ shall appear in an interchange in the order stated below. Functional groups are not to be used. There may be several messages within an interchange, but only one message type and version of a message type. A message consists of segments. The structures for segments and for data elements therein are shown in each Implementation Guide.

An interchange consists of:

Service String Advice	UNA	Required
Interchange Header	UNB	Mandatory
Message Header	UNH	Mandatory
User Data Segments		As specified in IG
Message Trailer	UNT	Mandatory
Interchange Trailer	UNZ	Mandatory

In addition to the above service segments, the service segment UNS can, when required, be used to divide a message into sections. See each Implementation Guide.

## 7.2 EDIFACT - character set

The character set to be used is UNOB with separation characters from UNOA. The UNA segment shall be used.

For the characters in the set below, the 7-bit codes in the basic ISO 646 standard shall be used, unless the corresponding 8-bit codes in ISO 6947 and 8859 or other bit codes are specifically agreed between the interchanging partners. The following characters can be used:

Letters, upper case	A to Z
Letters, lower case	a to z
Numerals	0 to 9
Space character	
Full stop	.
Comma	,
Hyphen/minus sign	-
Opening parenthesis	(
Closing parenthesis	)
Oblique stroke (slash)	/
Equals sign	=
Exclamation mark	!
Quotation mark	"
Percentage sign	%
Ampersand	&
Asterisk	*
Semicolon	;
Less-than sign	<
Greater-than sign	>

### *Separation characters:*

Apostrophe	'	segment terminator
Plus sign	+	segment tag and data element separator
Colon	:	component data element separator
Question mark	?	release character

? immediately preceding one of the characters ' + : ? restores their normal meaning. E. g. 10?+10=20 means 10+10=20. Question mark is represented by ??.

Other character sets can be agreed in an Interchange Agreement.

### 7.2.1 Denmark

For interchanges between parties in Denmark the character set to be used is UNOC as defined in ISO 8859-1, with separation characters from UNOA. The UNA segment shall be used. EDIFACT syntax version shall be 3.

### 7.3 Numeric values

#### 7.3.1 Decimal Mark

In the power market a point on the line ( . ) shall be used as Decimal Mark.

The decimal mark shall not be counted as a character of the value when computing the maximum field length of a data element. However, allowance has to be made for the character in transmission and reception.

When a decimal mark is transmitted, there shall be at least one digit before and after the decimal mark. For values represented by integers only, neither decimal mark nor decimal zeroes are used unless there is a need to indicate the degree of precision.

Allowed: 0.5 and 2 and 2.0

Not allowed: .5 or 2. or 02.

#### 7.3.2 Triad Separator

Triad separators shall not be used in interchange.

Allowed: 2500000

Not allowed: 2,500,000 or 2.500.000 or 2 500 000

#### 7.3.3 Sign

Numeric data element values shall be regarded as positive. Although conceptually a deduction is negative, it shall be represented by a positive value and such cases shall be indicated in the data element directory.

If a value is to be indicated to be negative, it shall in transmission be immediately preceded by a minus sign e. g. -112

The minus sign shall not be counted as a character of the value when computing the maximum field length of a data element. However, allowance has to be made for the character in transmission and reception.

#### 7.4 Compressing of data elements

In data elements for which the Data Elements Directory specifies variable length and there are no other restrictions, insignificant character positions shall be suppressed. In the case of insignificant characters, leading zeroes and trailing spaces shall be suppressed.

Note, however, that a single zero before a decimal mark is significant and that a zero may be significant (e. g. to indicate a temperature) if so stated in the data elements specification.

#### 7.5 Security for messages

**Note:** Ediel has an ongoing project that works with security. Please see the Ediel WEB-site [9] for more information.

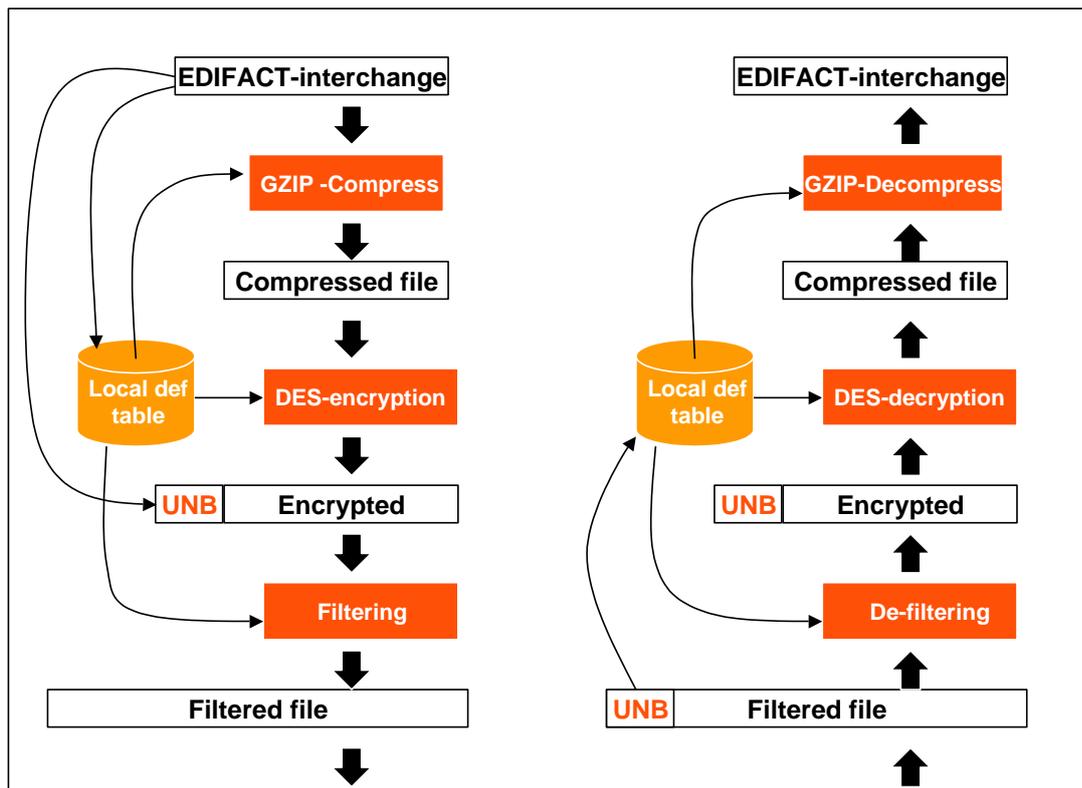
The members of the power market can choose whether or not to use encryption when sending and receiving messages.

The file-encryption solution is chosen as a relatively easy way to achieve better security in the Ediel information exchange. The file-encryption solution already in operation for EDI-security in the power-market in Norway has also been considered.

The method used for file-encryption is based on DES in CBC-mode (Cipher Block Chain) as single DES with 56-bits key-length.

The file-encryption solution is described in more details in the document "*File-encryption for EDIEL-security, Technical specification*".

The picture below gives an overview of the file-encryption solution.



Encryption is made on the whole EDIFACT-interchange file. To simplify key-management, the UNB-segment is stored in clear text in front of the encrypted file (which also includes an encrypted version of UNB). The Recipient's identity and sender's reverse routing address are used to obtain the current DES-key from a local definition table.

Before decryption, the leading, clear text UNB is read and eliminated from the file. The sender's identity from UNB and sender's reverse routing address are used to obtain the current DES-key from the local definition table.

Filtering is used to provide smoother characters when a 7-bit transmission-code (IA5text) is used for transmission. Note that this transformation doubles the file-size. Optionally, compression can be used to decrease the file-size (bilateral agreements).

### 7.5.1 Encryption in Denmark

Messages between parties in Denmark may be encrypted by S/MIME [8].

8. SERVICE SEGMENTS

8.1 UNA

**UNA** Service String advice  
**Function:** To define the characters selected for use as delimiters and indicators in the rest of the interchange that follows.  
**Classification:** Required (R1).  
**Comments:** The specifications in the Service string advice take precedence over the specifications for delimiters etc. in segment UNB.  
**Example:** UNA:+.? '

Ref.	Name	Cl.	Form.	Description
	COMPONENT DATA ELEMENT SEPARATOR	M	an1	<<» (Colon)
	DATA ELEMENT SEPARATOR	M	an1	<<+» (Plus sign)
	DECIMAL NOTATION	M	an1	<<.» (full stop)
	RELEASE INDICATOR	M	an1	<<?» (Question mark )
	Reserved for future use	M	an1	Insert space character
	SEGMENT TERMINATOR	M	an1	<<'» (Apostrophe)

## 8.2 UNB

**Note:** See also the chapter concerning “Addressing within Ediel”

**UNB** Interchange Header  
**Function:** To start, identify and specify an interchange.  
**Classification:** Mandatory (M1).  
**Comments:**

- The use of the UNB segment shall be agreed in an Interchange Agreement.

**Example:** UNB+UNOB:2+102123456789:82+10001:ZZ:BAS+961204:1434+2345'

Ref.	Name	Cl.	Form.	Description
S001 0001	SYNTAX IDENTIFIER Syntax identifier	M M	a4	<b>Code:</b> UNOB UNOC (in Denmark)
0002	Syntax version number	M	n1	<b>Code:</b> 2 Version 2 of ISO 9735 (EDIFACT-syntax) 3 Version 3 of EDIFACT-syntax shall be used if Syntax identifier is “UNOC”
S002 0004	INTERCHANGE SENDER Sender identification	M M	an..35	To be defined by the <i>sender</i> of the message, choose one of the following: <ul style="list-style-type: none"> <li>EAN Location no. (14)</li> <li>«102»+Company registration no. from «Foretaks-/Enhets-registeret» in Norway, (82)</li> <li>«101»+Company Id. from «STF» in Norway, (82)</li> <li>Bilaterally defined (ZZ).</li> </ul>
0007	Partner identification code qualifier	R	an..4	<b>Code:</b> 14 EAN (European Article Numbering Association) 82 Statens Teleforvaltning, Norway ZZ Bilaterally defined.
0008	Address for reverse routing	O	an..14	To be defined by the <i>sender</i> of the message.

S003	INTERCHANGE RECIPIENT	M		
0010	Recipient Identification	M	an..35	To be defined by the <i>receiver</i> of the message, choose one of the following: <ul style="list-style-type: none"> <li>• EAN Location no. (14)</li> <li>• «102»+Company registration no. from «Foretaks-/Enhets-registeret» in Norway, (82)</li> <li>• «101»+Company Id. from «STF» in Norway, (82)</li> <li>• Bilaterally defined (ZZ).</li> </ul>
0007	Partner identification	R	an..4	<b>Code:</b> 14 EAN (European Article Numbering Association) 82 Statens Teleforvaltning, Norway ZZ Bilaterally defined.
0014	Routing address	O	an..14	To be defined by the <i>receiver</i> of the message
S004	DATE/TIME OF PREPARATION	M		
0017	Date	M	n6	Date for creation of interchange (YYMMDD)
0019	Time	M	n4	Time for creation of interchange (HHmm)
0020	INTERCHANGE CONTROL REFERENCE	M	an..14	Reference assigned by sender. Shall be unique over time for the sender defined in S002. If not unique the latest shall automatically be rejected.
S005	RECIPIENTS REFERENCE, PASSWORD	X		
0022	Recipient's reference/ password	X	an..14	
0025	Recipient's reference/ password qualifier	X	an2	
0026	APPLICATION REFERENCE	O	an..14	To be defined bilaterally.
0029	PROCESSING PRIORITY CODE	X	a1	
0031	ACKNOWLEDGEMENT REQUEST	O	n1	<b>Code:</b> 1 if sender requests an EDIFACT CONTRL message, i. e. UNB and UNZ segments received and identified, otherwise not used.
0032	COMMUNICATIONS AGREEMENT	X	an..35	
0035	TEST INDICATOR	D	n1	<b>Code:</b> 1 if the interchange is a test, otherwise not used.

### 8.3 UNZ

**UNZ** Interchange Trailer  
**Function:** To end and check the completeness of an interchange.  
**Classification:** Mandatory (M1).  
**Comments:**  
**Example:** UNZ+1+358765298'

Ref.	Name	Cl.	Form.	Description
0036	INTERCHANGE CONTROL COUNT	M	n..6	The count of the number of messages in the interchange
0020	INTERCHANGE CONTROL REFERENCE	M	an..14	Shall be identical to 0020 in UNB.

### 8.4 UNH

The UNH segment is described in each Implementation guide and will not be detailed described in this functional description. Below you will find common definitions of some of the data elements used in UNH.

The message reference number is transferred in data element 0062 in the UNH segment. The message reference uniquely identifies the message in the interchange. This can for instance be done by using a sequence number that identifies each message in the interchange. The first message will have reference no. 1, the second message will have reference 2, etc.

The reference can be set to 1 in the first message of the next interchange.

**Note:** The message reference number (alphanumeric) is defined by the sender of the message and may have other values than a sequence number (1,2,3....).

## **9. ADDRESSING WITHIN EDIEL**

Ediel and other organisations (ETSO and EURELECTRIC) in the European power industry are for the moment running projects that will influence on how parties and roles are identified. These projects will also influence the principles used for addressing of messages between actors in the power market. The result of these projects may change the way Ediel messages are addressed in the future.

The basic rules for how to address messages within Ediel, as it looks for the moment, can be found in appendix B.

**10. THE EDIFACT CONTRL MESSAGE**

The CONTRL-message is normally used to accept or reject whole Interchanges (i. e. UNA/UNB - UNZ) within Ediel. This means that the segments used in Ediel are UNH, UCI and UNT. We advise you to configure your EDI-software in a way that makes it possible to receive a CONTRL message, with more segments than specified in Ediel, without rejecting the CONTRL message.

The EDIFACT CONTRL-message shall be sent if an error occurs when receiving an EDIFACT Interchange.

The parties can choose whether or not to use an EDIFACT CONTRL-message as a positive acknowledgement. If used, this shall be pointed out in the UNB segment (data element 0031 with value 1) for the sender of the original message.

**Note:** If an APERAK message is requested a CONTRL message is not normally necessary.

**10.1 Segment table**

In this chapter the segment table for the Syntax and Service Report Message (CONTRL) is shown. The segments and segment groups that are used within Ediel are shown with bold letters.

**HEADER SECTION**

<b>UNH Message header</b>	<b>M</b>	<b>1</b>	
<b>UCI Interchange response</b>	<b>M</b>	<b>1</b>	
----- Segment group 1 -----	C	999999	-----+
UCM Message response	M	1	
----- Segment group 2 -----	C	999	-----+
UCS Segment error indication	M	1	
UCD Data element error indication	C	99	-----+
----- Segment group 3 -----	C	999999	-----+
UCF Functional group response	M	1	
----- Segment group 4 -----	C	999999	-----+
UCM Message response	M	1	
----- Segment group 5 -----	C	999	-----+
UCS Segment error indication	M	1	
UCD Data element error indication	C	99	-----+
<b>UNT Message trailer</b>	<b>M</b>	<b>1</b>	

## 10.2 Description of segments used

### UNH, Message header

A service segment starting and uniquely identifying a message. The message type code for Syntax and Service Report Message is CONTRL.

Note: Syntax and Service Report Messages conforming to this document must contain the following data in segment UNH, composite S009:

Data element 0065 CONTRL  
0052 2  
0054 2  
0051 UN

### UCI, Interchange response

A segment identifying the interchange being responded to (the subject interchange). It also indicates interchange receipt, acknowledgement or rejection (action taken) of the UNA, UNB and UNZ segments, and identifies any error related to these segments.

Depending on the action code, it may also indicate the action taken on the functional groups and messages within that interchange.

The subject interchange is identified by copying its Interchange Sender, Interchange Recipient, and Interchange Control Reference data elements into the identical data elements in this segment. An erroneous or missing UNA, UNB or UNZ segment may be identified. If UNG or UNH are identified, the error relates to some functional group of message. If no segment is identified, the error relates the complete interchange, unless the error code identifies some other position.

### UNT, Message trailer

A service segment ending a message, giving the total number of segments in the message and the control reference number of the message.

10.3 Detailed description of the CONTRL message

		<b>MESSAGE: CONTRL</b>		<b>SG 0</b>																																																												
		<p><b>Function:</b> The Syntax and Service Report Message (CONTRL) is a message that indicates interchange receipt and acknowledgement or rejection.</p> <p><b>Segments:</b> UNH, UCI</p>																																																														
Message-reference >		<p><b>UNH</b> Message header</p> <p><b>Function:</b> A service segment starting and uniquely identifying a message.</p> <p><b>Classification:</b> Mandatory (M1).</p> <p><b>Comments:</b></p> <p><b>Example:</b> UNH+1+CONTRL:2:2:UN:EDIEL2'</p>																																																														
		Message-type		<table border="1"> <thead> <tr> <th>Ref.</th> <th>Name</th> <th>Cl.</th> <th>Form.</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0062</td> <td>MESSAGE REFERENCE NUMBER</td> <td>M</td> <td>an..14</td> <td>The message reference uniquely identifies the message in the interchange. This can for instance be done by using a sequence number that identifies each message in the interchange. The first message will have reference no. 1, the second message will have reference 2, etc. The reference can be set to 1 in the first message of the next interchange.</td> </tr> <tr> <td>S009</td> <td>MESSAGE IDENTIFIER</td> <td>M</td> <td></td> <td></td> </tr> <tr> <td>0065</td> <td>Message type identifier</td> <td>M</td> <td>an..6</td> <td><b>Code:</b> CONTRL</td> </tr> <tr> <td>0052</td> <td>Message type version number</td> <td>M</td> <td>an..3</td> <td><b>Code:</b> 2</td> </tr> <tr> <td>0054</td> <td>Message type release number</td> <td>M</td> <td>an..3</td> <td><b>Code:</b> 2</td> </tr> <tr> <td>0051</td> <td>Controlling agency</td> <td>M</td> <td>an..2</td> <td><b>Code:</b> UN</td> </tr> <tr> <td>0057</td> <td>Association assigned code</td> <td>R</td> <td>an..6</td> <td><b>Code:</b> EDIEL2</td> </tr> <tr> <td>0068</td> <td>COMMON ACCESS REFERENCE</td> <td>X</td> <td>an..35</td> <td></td> </tr> <tr> <td>S010</td> <td>STATUS OF THE TRANSFER</td> <td>X</td> <td></td> <td></td> </tr> <tr> <td>0070</td> <td>Sequence message transfer number</td> <td>X</td> <td>n..2</td> <td></td> </tr> <tr> <td>0073</td> <td>First/last seq. mess. transfer. indicator.</td> <td>X</td> <td>a1</td> <td></td> </tr> </tbody> </table>			Ref.	Name	Cl.	Form.	Description	0062	MESSAGE REFERENCE NUMBER	M	an..14	The message reference uniquely identifies the message in the interchange. This can for instance be done by using a sequence number that identifies each message in the interchange. The first message will have reference no. 1, the second message will have reference 2, etc. The reference can be set to 1 in the first message of the next interchange.	S009	MESSAGE IDENTIFIER	M			0065	Message type identifier	M	an..6	<b>Code:</b> CONTRL	0052	Message type version number	M	an..3	<b>Code:</b> 2	0054	Message type release number	M	an..3	<b>Code:</b> 2	0051	Controlling agency	M	an..2	<b>Code:</b> UN	0057	Association assigned code	R	an..6	<b>Code:</b> EDIEL2	0068	COMMON ACCESS REFERENCE	X	an..35		S010	STATUS OF THE TRANSFER	X			0070	Sequence message transfer number	X	n..2		0073	First/last seq. mess. transfer. indicator.	X
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**UCI** Interchange response  
**Function:** A segment identifying the interchange being responded to (the subject interchange). It also indicates interchange receipt, acknowledgement or rejection.  
**Classification:** Mandatory (M1).  
**Comments:**

- The content of data element 0020 and composite element S002 and S003 shall be the same as the corresponding elements in the UNB segment of the received message.
- If other codes than «1» and «4» is used in data element 0083, this shall be specified bilaterally.

**Example:** UCI+2345+102123456789:82+10001:ZZ:BAS+1'

Ref.	Name	Cl.	Form.	Description
> 0020	INTERCHANGE CONTROL REFERENCE	M	an..14	«Interchange control reference» from received message.
> S002	INTERCHANGE SENDER	M		
0004	Sender identification	M	an..35	«Sender Id.» from received message.
0007	Partner identification code qualifier	D	an..4	«Partner identification code qualifier» from received message.
0008	Address for reverse routing	D	an..14	«Address for reverse routing» from received message.
> S003	INTERCHANGE RECIPIENT	M		
0010	Recipient identification	M	an..35	«Recipient identification» from received message.
0007	Partner identification code qualifier	D	an..4	«Partner identification code qualifier» from received message.
0014	Routing address	D	an..14	«Routing address» from received message.
> 0083	ACTION, CODED	M	an..3	<b>Code:</b> 1 Acknowledged (this level and all lower levels) 4 This level and all lower levels rejected
0085	SYNTAX ERROR, CODED	X	an..3	
0013	SEGMENT TAG	X	a3	
S011	DATA ELEMENT IDENTIFICATION	X		
0098	Erroneous data element position in segment	X	n..3	
0104	Erroneous component data element position	X	n..3	

**UNT** Message trailer  
**Function:** A service segment ending a message, giving the total number of segments in the message and the control reference number of the message.  
**Classification:** Mandatory (M1).  
**Comments:**  
**Example:** UNT+3+1'

Ref.	Name	Cl.	Form.	Description
0074	NUMBER OF SEGMENTS IN THE MESSAGE	M	n..6	Number of segments in the message, including UNH and UNT.
0062	MESSAGE REFERENCE NUMBER	M	an..14	Control reference number. Equal to 0062 in UNH

## **11. COMMUNICATION**

### **11.1 X.400**

There shall only be one interchange in each X.400 message. This interchange shall be put as the first (and only) body part in the X.400 message.

The body part is advised to be defined as IA5-text unless encryption is used. If encryption is used the X.400 body part shall be defined as binary.

### **11.2 SMTP**

When SMTP is used, the message must be in the MIME format [10], [11] and [12]. The actual EDIFACT interchange must be sent as an attached file, not as a part of the body text. In Denmark SMTP over the Internet is the only allowed communication method.

References:

[10] RFC 822, The standard for the format of ARPA Internet text messages.

[11] RFC 1521, Mime, part one

[12] RFC 1522, Mime, part two

Found at: <ftp://ftp.rfc-editor.org/in-notes/> or <http://www.rfc.dk/>

### **11.3 FTP**

FTP is the most used communication protocol in Finland.

### **11.4 Time synchronisation**

Each party shall undertake that the time in their mail and Ediel systems is within 10 seconds of the national normal time. For countries using Central European daylight Saving Time, this means that server time shall be set to UTC+1 during wintertime and to UTC+2 during summertime.

### **11.5 Interchange size**

An Ediel interchange is recommended not to exceed the size of 1 Mbytes.

### **11.6 Extra characters in body parts**

There shall not be any extra characters in addition to the ones used for the EDIFACT messages and those required from the communication protocol used (e. g. extra spaces after

the EDIFACT interchange in a X.400 body part, CR/LF within a message/interchange etc.), if not bilaterally agreed.

## 12. DICTIONARY

### English

Balance adjustment  
Balance regulation  
Bidding area  
Bilateral trading  
Busbar connection  
Constraint area  
  
Data Provider  
Delivery schedule  
Delivery forecast  
Direction  
Frequency adjustment  
Functional area  
Meter location  
Network area  
Power industry  
Power plant  
Price area  
Serial Id.

### Danish

Regulerkraft aktivering  
Anmeldelsesområde  
Bilateral handel  
Tilslutningspunkt  
Netområde med  
overføringsbegrænsninger  
  
Aktør  
Plan  
Prognose  
Retning  
Regulerstyrke  
  
Målested  
Netområde  
Elbranchen  
Kraftværk  
Prisområde  
Serie Id.

### Finnish

Taseen säätö (ennen tuntia)  
Taseen säätö (tunnin aikana)  
Ilmoitusalue  
Kahdenkeskinen kauppa  
Liittymispiste, Johtolähtö  
Kantaverkkoalue  
  
Tiedon tuottaja  
Tuotantosunnitelma  
Ennuste  
Suunta  
(Taajuuden)Säätövoima  
Toiminta-alue  
Mittauspaikka  
Jakeluverkko, alueverkko  
Sähköala  
Voimalaitos  
Hinta-alue  
Aikasarjan tunnus

### English

Balance adjustment  
Balance regulation  
Bidding area  
Bilateral trading  
Busbar connection  
Constraint area  
Data Provider  
Delivery schedule  
Delivery forecast  
Direction  
Frequency adjustment  
Functional area  
Meter location  
Network area  
Power industry  
Power plant  
Price area  
Serial Id.

### Norwegian

Balanse justering  
Balanse regulering  
Anmeldingsområde  
Bilateral (tosidig) handel  
Avgang  
Snittområde  
Oppgavegiver  
Produksjonsplan  
Prognose  
Retning  
Regulerstyrke  
Funksjonsområde  
Målested  
Nett område  
Kraftbransjen / Elforsyningen  
Kraftverk (Stasjonsgruppe)  
Prisområde  
Serie Id.

### Swedish

Balansjustering  
Balansreglering  
Anbudsområde  
Bilateral handel  
Leveranspunkt  
Snittområde  
Uppgiftslämnare  
Produktionsplan  
Prognos  
Riktning  
Reglerstyrka  
Funktionsområde  
Mät punkt  
Nätområde  
Elbranschen  
Kraftstation  
Prisområde  
Serie-ID

## Appendix A GENERIC PRODUCT CODES

Ediel has for the moment assigned the following generic product codes:

8716867000016	Power active (e.g. W)
8716867000023	Power reactive (e.g. var)
8716867000030	Energy active (e.g. Wh)
8716867000047	Energy reactive (e.g. varh)

**Note:** If more product codes are needed please contact a member of Ediel. Contact persons can be found on [www.ediel.org](http://www.ediel.org)

### A.1 About product codes

The basic idea of generic product codes is that:

- The power sector knows only a very limited set of metered products or services.
- These metered products and services are the same for all actors since the characteristics depend on a (technical) sector definition.
- Besides metered products and services also non-metered product and services are being supplied. These products and services are not defined by the sector and therefore the individual supplier of the product/service may assign the EAN codes.
- One central body should assign generic product codes.
- The need for information on additional characteristics of the product/service should not lead to extra EAN product codes, but should be satisfied by including this information in the message as additional to the product code.

**Note:**

- The product codes deals with products and services directly related to the meter only.
- Additional information on the product may in some cases be relevant in the information exchange between parties in order to process transactions correctly. (For some purposes it might be interesting to know that the generator quality of the energy supplies is green or atomic or that the product was consumed during the night, etc....).
- Different suppliers may offer the product at different prices for different customers. This means that references to contract or time frame are relevant to find the actual price for the product. But the metered product itself remains the same for all.

### A.2 EAN product codes

The EAN product code has been developed for logistic purposes in retail. The code should contain no meaning in itself: it should just identify the product and act as the key to lookup the information about the product in the database. The party that is responsible for the characteristics of the product should assign the code. All parties in the supply chain should use this producer's EAN product code. The same product acquired through different sales channels keeps the same EAN code and will be identified as being the same at the checkout. The product may be bought from different wholesalers and the price is determined by the product code in combination with the supplier's ID.

Ediel recommends using EAN codes for identifying parties and net locations. This also gives an opportunity to use EAN codes for products. Basically the situation in the power sector is very alike the situation in trade and retail. It is even a simplified version of it. Metered products and services are defined within the total system. Generators can be seen as factories in the retail model, producing products according to “head quarter’s” specifications. And grid operators and suppliers can be seen as wholesalers and retailers. The result of this, is a limited set of products and services defined by the system and not by the individual supplier.

### **A.3 Additional product characteristics**

In the power sector additional information is sometimes needed. For instance there will be a need for exchanging information about the “generator quality” of the energy (like green or hydro or atomic). In specific situations the customer might be interested in the controllability of supply (lead time or ramp rate). Prices may vary in time. So it may also be important to know when the delivery took place (day/night time frame, or even more precise in case of interval metering).

So additional characteristics may be relevant, but will not lead to extra product codes since the product remains the same despite the occasional need for additional information.

The main advantages of the use of generic product codes for metered products and services are:

- 1) Maintenance of master data is kept as simple as possible, both in up and in down stream markets.
- 2) No extra hindrance for changing supplier in the down stream market.
- 3) Best relation possible to real life metering.
- 4) Re-use of well proven concept in trade and retail instead of inventing a new way of coding for the power sector.

## Appendix B ADDRESSING WITHIN EDIEL

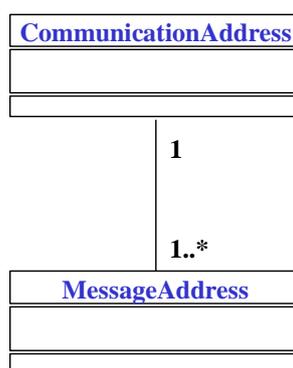
Ediel and other organisations (ETSO and EURELECTRIC) in the European power industry are for the moment running projects that will influence on how parties and roles are identified. These projects will also influence the principles used for addressing of messages between actors in the power market. The result of these projects may change the rules defined in this appendix.

### B.1 Basic principles

#### B.1.1 Principles for addressing

The following principles is used as a basis for the rules stated in this document:

- The principles for addresses should be as simple as possible. It is important that acknowledgements and the routing of messages can be implemented in the same way regardless of the use of third parties and other matters (e.g. application software).
- The party being addressed shall decide the address to be used. This principle shall be applicable for all kind of addresses, e.g. for X.400 addresses, SMTP addresses, EDIFACT addresses (in UNB), etc.
- There should be a hierarchy in the addresses, starting with the communication address (e.g. X.400 addresses or SMTP addresses) on the top level and the routing address (e.g. UNB address) on a lower level. A routing address (e.g. UNB address) shall not be linked to more than one communication address, but a communication address may be linked to several routing addresses. A many to many relationship will make it difficult for an application to select the correct combination of addresses when sending messages.



### B.1.2 Principles for identification

- The organisation responsible for the party or object to be identified shall decide the identification. This principle shall be applicable for all kind of identifications, i.e. for party identification in the UNB segment, identification of parties in the NAD segment, identification of metering points etc.
- For simplifications, different parties (e.g. FR, DO, C1, C2 in the NAD segment in the header part of a message) shall not be mixed in an interchange.
- Metering points, areas and party identifications shall be identified through a common, global and unique identification.
- The identification number should be as concise as possible, to make it easier to read and write.
- It shall not be necessary to renumber the objects (metering points) when companies merge or split.
- The identification number should be a sequence number without any logical meaning.

## **B.2 Addressing in the UNB segment**

### B.2.1 Identification principles

The EAN identification number GLN (Global Location Number) is the preferred identification in the routing address. This rule is subject to appropriate approval of the EAN/Ediel project.

The company can decide the identification number. This may be one identification number for the whole juridical company or one identification number for each role a company can have. The following type of roles (per juridical organisations) can be identified in the routing address:

- Grid operator
- Balance supplier
- Firm energy supplier
- TSO (Transmission System Operator)
- PX (Power exchange)
- Balance responsible
- Third party
- Settlement responsible

B.2.2 The UNB segment

The UNB segment shall contain both the sender and the receiver addresses in the following data elements:

S002 0004 0007  0008	INTERCHANGE SENDER Sender identification Partner identification code qualifier  Address for reverse routing	M M R  O	an..35 an..4  an..14	EAN Global Location no. (GLN) <b>Code:</b> 14 EAN (European Article Numbering Association) The sender of a message can decide if the business function shall be used or not. See separate code list for business functions.
S003 0010 0007  0014	INTERCHANGE RECIPIENT Recipient Identification Partner identification  Routing address	M M R  O	an..35 an..4  an..14	EAN Global Location no. (GLN) <b>Code:</b> 14 EAN (European Article Numbering Association) The receiver of a message can decide if the business function shall be used or not. See separate code list for business functions.

B.2.3 Principles for the UNB sub-address

The sub-address shall only be used for routing of messages to the right application, and not to identify different organisations, departments or other means.

***Sub-addresses for receiver of message:***

- The receiver of an interchange can decide if the receiver sub-address shall be used or not.
- The sub-address shall be the business function concerned.
- If a receiver chooses to use sub-addresses, this shall apply for all interchanges and business functions.
- Receiver address incl. sub address shall be used for internal routing.
- APERAK shall be treated as any other EDIFACT message regarding the addresses. I.e. the sender address, including sub-address in the original message, shall be sent as receiver address in the APERAK message. And the receiver address, including sub address in the original message, shall be sent as sender address in the APERAK message.

***Sub-addresses for sender of message:***

- The sender of an interchange can decide if the sender sub-address shall be used or not.
- The sub-address shall be the business function concerned.
- A CONTRL message shall be returned with opposite addresses. I.e. the sender address, including sub-address in the original message, shall be sent as receiver address in the CONTRL message. And the receiver address, including sub address in the original message, shall be sent as sender address in the CONTRL message.

B.2.4 Business functions

The following business functions are identified so far:

<b>Code for routing address</b>	<b>Business function</b>	<b>Description</b>
101	Trade on the spot market and bilateral trade	Inclusive the messages REQOTE, QUOTES, SLSRPT and invoice details/basis.
102	Trade in the balance regulation market	Basic trade in the balance regulation market (QUOTES, SLSRPT)
103	Trade in the ancillary services market	Basic trade in ancillary services markets
104	Planning of production, consumption, trade, ancillary services, etc.	Reporting of forecasts/plans
105	Grid capacity planning	Planned exchange between nets
106	Settlement	Inclusive share coefficients and invoice details/basis
107	Invoicing	Exclusive invoice details/basis
108	Master data	Change of supplier, change of meter, exchange of master data, etc.
109	Metering	Metered time series (e.g. hourly-metered time series), exclusive of non interval meter metering.
110	Meter stand processing	Non interval meter readings
111	Operation	Up/down regulation, disconnection of installation, etc.
112	Meteorological services	Information regarding weather conditions etc.

B.2.5 Class diagram for UNB addresses

