

EDI in Procurement

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1. What is EDI – targets of EDI

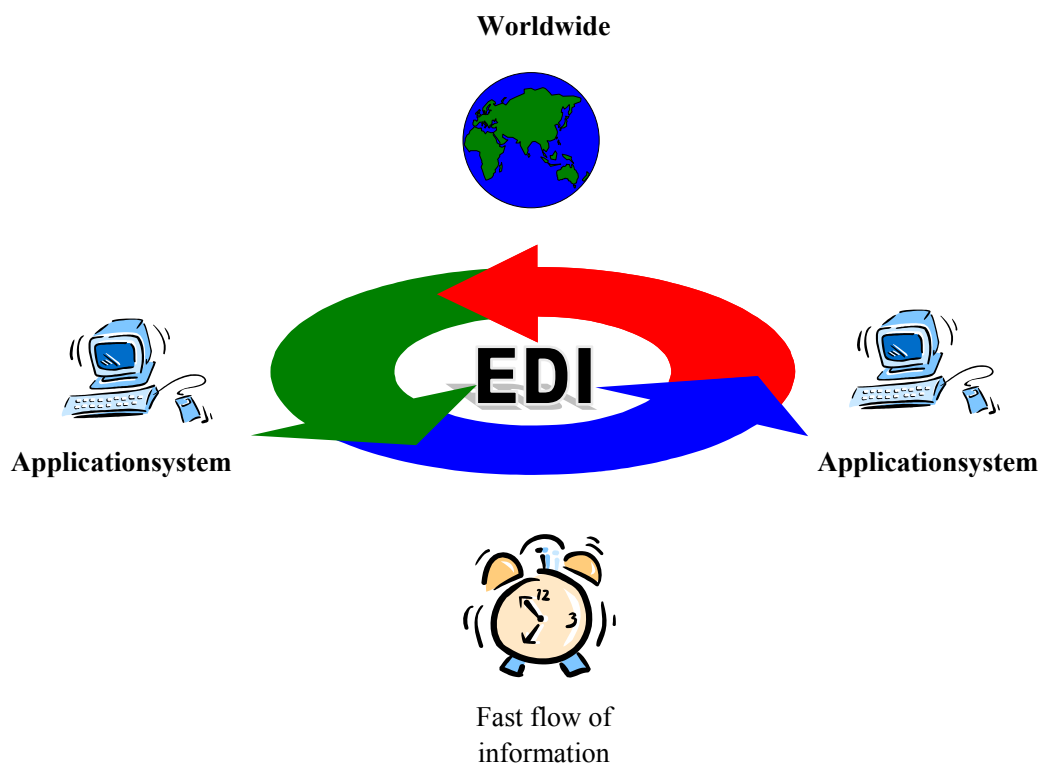
The electronic data exchange has big importance for Bosch and is a criterion with the choice of the suppliers.

Also the increasing internationalization of the economic processes asks for a fast and standardized processing of the business. EDI is therefore a modern instrument to accelerate internal and external processes and to form more transparent.

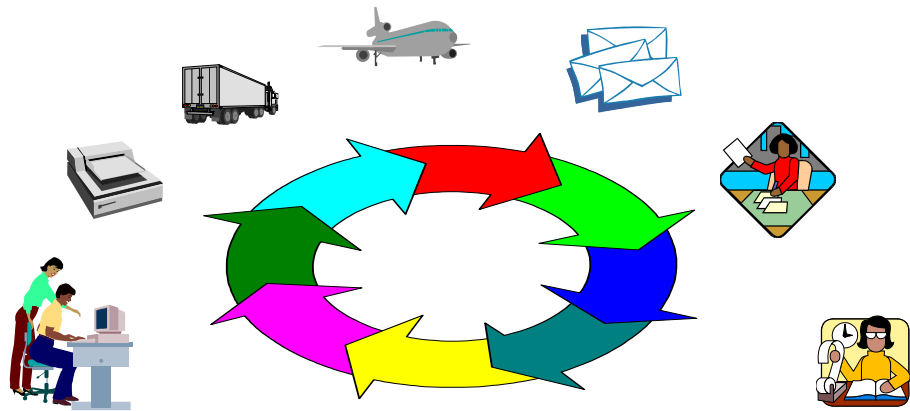
EDI stands for **Electronic Data Interchange** (Electronic data exchange). Under it one understands the electronic exchange of structured data between application systems DV of two or several business partners.

The advantages of the automatic exchange of commercial, technical and other data are:

- Avoidance of costs-intense recording activities susceptible to error
- Automatically data exchange with standardized formats
- Communication between computer applications
- Faster flow of information (at any time and world-wide)
- Costs saving



Communication between BOSCH and supplier today:



The processes employed today are characterised by the computer-supported creation of all business papers, which are printed out in order to be re-recorded by the business partner (document creation → printout and shipment → re-recording by business partner's data department). This 'intermediate storage' on paper is also referred to as an 'interruption of medium'.

Avoiding this 'interruption of medium' in the logistical chain between BOSCH and the supplier yields a lot of cost saving potentials for both sides.

The electronic exchange of business data enables quick and flawless information exchange operations between business partners, without any delays in time, 24 hours a day, 7 days a week.

To be able to implement such processes, the corresponding message formats and communication structures have been standardised. They allow all parties to exchange data worldwide and irrespective of the branch involved.

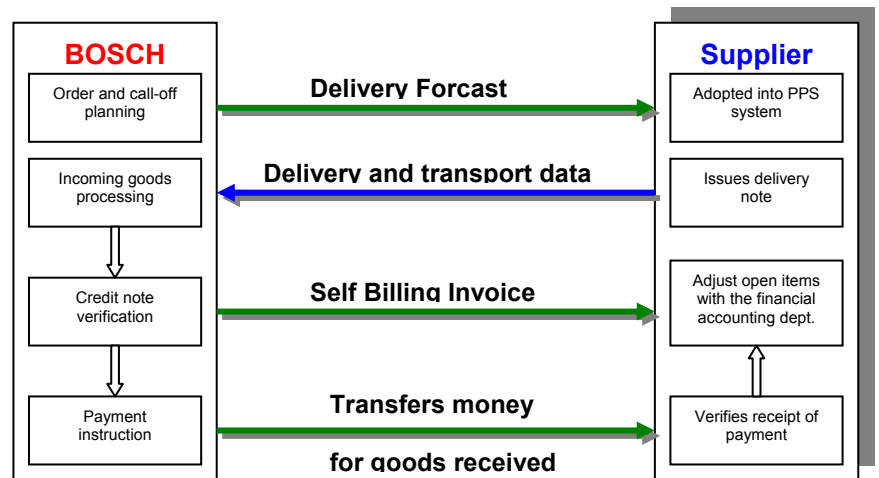
To coordinate the 'EDI in Procurement' project, a central working group was installed at BOSCH. This group considers and channels the requirements of all BOSCH plants, thus avoiding multiple work in the implementation and operation of EDI, both at the supplier and at BOSCH.

The BOSCH EDI team is your contact platform regarding all questions concerning EDI.

2. EDI between BOSCH and supplier

BOSCH has set itself the goal to further optimise all business operations in procurement, logistics and payment. What is of great importance in this context is a continuous flow of information between BOSCH and its partners.

This optimisation refers to communications both with suppliers and (local) forwarders. In the following please find some brief information on the business processes currently supported by BOSCH-EDI.



2.1. EDI in procurement and logistics

2.1.1. Delivery forecast (delivery requests)

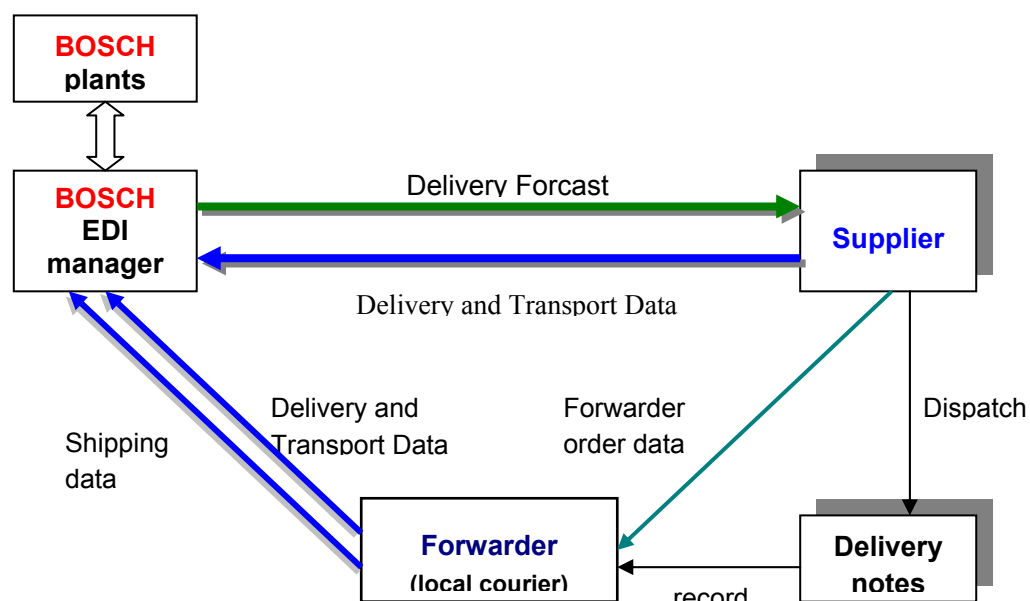
Delivery call-offs are automatically created by the BOSCH ordering system, which are then submitted to the supplier by EDI. In this context, BOSCH expects the supplier to be able to further process the data received automatically within the company's computer system.

2.1.2. Delivery and Transport Data (Despatch Advice)

The supplier then uses the company's internal dispatch system to transmit the relevant delivery and transport data to BOSCH by EDI. This data is automatically read into the corresponding BOSCH systems and further processed. This notification of goods shipment makes it possible to fully optimise all goods receipt operations.

For deliveries handled through a (local) forwarding agent it is necessary to provide further shipping data which include more information on the contents of the delivery transport.

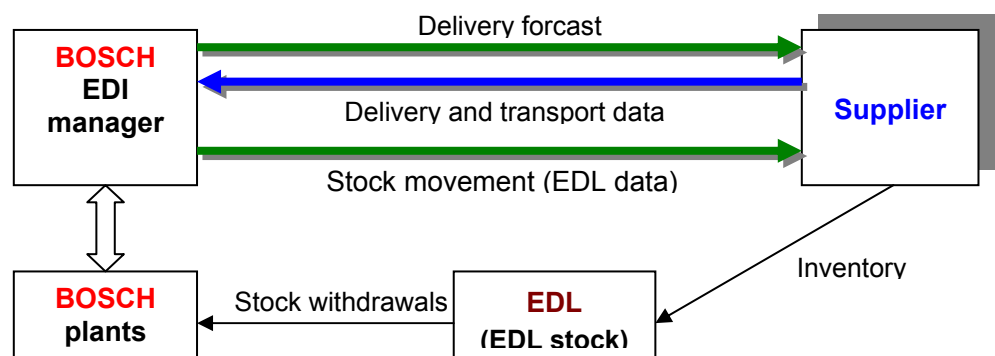
At the present time, the (local) forwarder can still record the delivery and transport data and transmit it to BOSCH. For this purpose the supplier must provide the carrier service with hardcopies of the relevant despatch (delivery) data including the notification of the transport order. The corresponding sample forms are available from the local forwarder in charge.



2.1.3. Supplier stock with external service provider (EDL)

The EDL scheme is applied in cooperation with selected suppliers only.

The external service provider (EDL, this can also be the supplier himself) runs a warehouse at his own expense, from which Bosch can withdraw material as required. The inventory of the EDL stock belongs to the supplier. Bosch will notify the supplier about every individual withdrawal operation; once material is withdrawn, the corresponding goods receipt record will be created at Bosch. The stock is managed in the Bosch system.



The delivery and transport data may be provided to the external service provider in order to support the booking process. The individual process to be applied has to be clarified with the provider as need arises.

2.2. EDI in procurement and payment

2.2.1. The Self Billing Invoice (GaV)

With the GaV process, each item delivered by the supplier will be 'tagged' with the individual price agreed in the valid Supplier Agreement upon receipt of the merchandise. All goods receipts of all suppliers participating in the self billing process will be subjected to an evaluation run at regular intervals.

This evaluation process then provides the basis for the payments effected to the supplier's account by the next date of payment, taking into account the individual discount rates agreed. On the other hand, the system automatically creates a credit note advice, from which the supplier can clearly see the delivery items paid with the forthcoming money transfer. The GaV process has already been implemented with a number of selected BOSCH plants.

3. How does EDI work with BOSCH

Classical EDI uses various processes and formats in order to exchange business data.

The standardisation of EDI irrespective of the individual branch involved allows suppliers to exchange data with their other customers in exactly the same way as is done with BOSCH, without requiring any additional EDI software. This means that you can also employ this process for other clients and sub-vendors as well.

3.1. Classical EDI

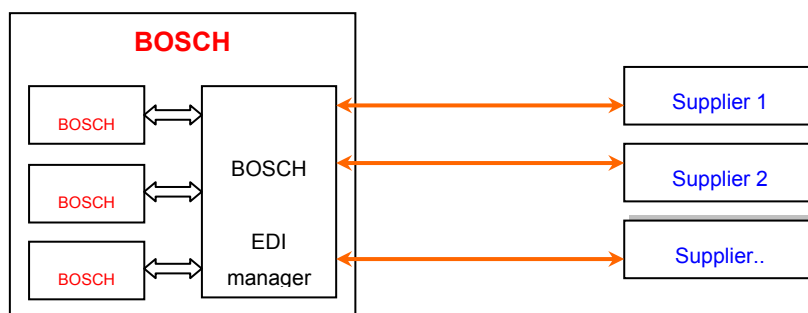
The data transport methods used for classical EDI are described in chapter 3.1.1 'Transfer method'. Chapter 3.1.2 'Formats' contains further information on the standardised opportunities to set up a data record.

3.1.1. Transmission procedures

BOSCH supports two different transfer method in order to employ EDI with as many suppliers as possible.

a) PTP process (point-to-point)

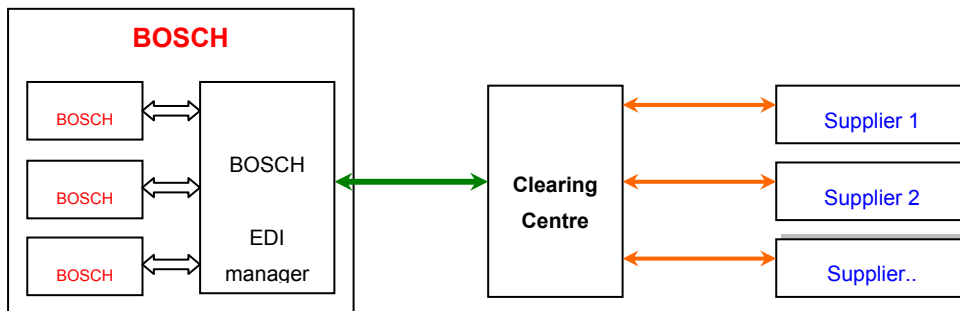
With the PTP process, there is a **direct** communication link between the individual computers involved. For this purpose, the supplier must have access via **ISDN** or **DATEX-P**.



The **PTP process** refers to the preferred method employed by BOSCH.

a) Clearing process

For the clearing process, the data is transmitted to the operator of a clearing centre. There, all data is collected and forwarded to the receiver at the agreed date and time. BOSCH uses the EDI express system of GEIS (General Electric).



3.1.2.Formats

BOSCH employs the standard formats used by industry, such as

- **VDA (Verband Der Automobilindustrie;** [association of the automobile industry]),
- **EDIFACT (Electronic Data Interchange For Administration, Commerce and Transport)** and
- **ODETTE (Organisation for Data Exchange by Tele Transmission in Europe).**

Based on the high flexibility of the EDIFACT and ODETTE standards the data to be exchanged can be individually harmonised between both sides. For the installation of these standards this may entail more time to be required as compared with the installation of an EDI link in accordance with VDA.

The following formats and business processes have been implemented at BOSCH:

- **Delivery Forecast (B+A Plan)**

VDA 4905	Version 3	Edition of Oct. 1988
EDIFACT DELFOR	Version 92.1	Version D97.A
ODETTE DELINS	Version 3	Edition of Juni 1990
- **Delivery and Transport Data (LuT)**

VDA 4913	Version 4	Edition of März 1996
EDIFACT DESADV	Version 92.2	Version D97.A
- **Detailed delivery data**

VDA 4921	Version	Edition of April 1989
EDIFACT IFCSUM	Version 93.A	
- **Self Billing Invoice (GaV)**

VDA 4908	Version	Edition of April 1989
EDIFACT SBINV	Version D97.A	
- **Stock movements (EDL-Daten)**

VDA 4913/2	Version 4	Edition of March 1996
EDIFACT INVRPT	Version D97.A	

The implementation guidelines of the formats used by BOSCH as well as detailed formatting instructions required in some cases are available and can also be requested from the BOSCH EDI team.

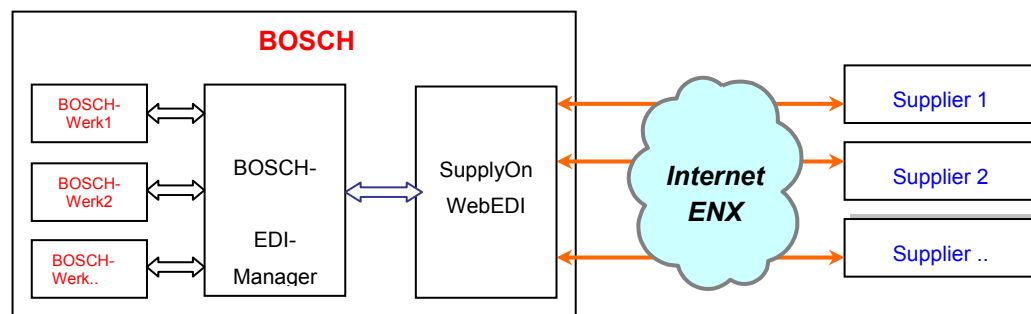
The VDA format descriptions are available from VDA for a small fee. (VDA, Postfach 17 05 63, 60079 Frankfurt, Tel: +49 (0)69/97507-283)

3.2.WebEDI-SupplyOn

Up to now enterprises with very low transaction amount and little DV infrastructure judged the classic electronic data exchange (EDI, OFTP) as too costs-intense. The development of the Internet opens here for small and medium-size supplying a new perspective, because WebEDI makes possible the transmission of data and the illustration of standardized commercial incidents via Internet.

Bosch is bound for this purpose to the Internet market place SupplyOn. SupplyOn offers with WebEDI to the suppliers and buying enterprises functional characters EDI on the Internet.

The SupplyOn server processes the EDI data skillful by Bosch as web forms and provides them the appropriate suppliers together with message forms for the data acquisition. The supplier needs to the operation only a PC as well as an Internet access and – browser



The general electronic communication is made possible by **SupplyOn WebEDI** between Bosch and small and middle supplier. All commercial incidents like delivery forecast, delivery and transport data, stock movements and self billing invoices notes can be illustrated. Media breaks by the use of post, fax or E-mail are cancelled. Smaller enterprises are connected directly with Bosch and can use many advantages of the classic EDI without having to carry, however, the high costs of a conventional EDI solution.

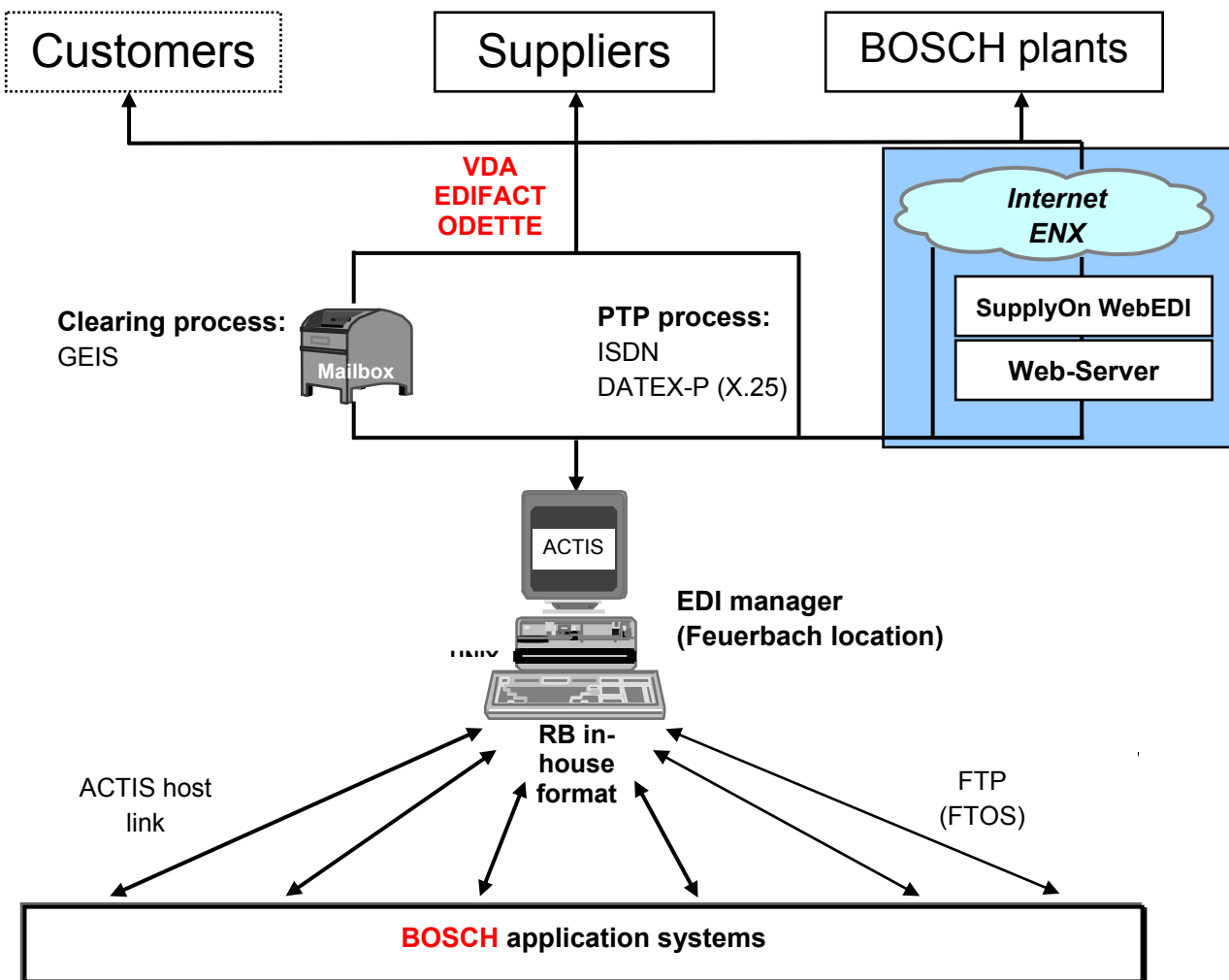
4. Technical conditions

4.1. With BOSCH

In order to consolidate EDI activities with suppliers and provide a uniform platform for data transmission and receipt, BOSCH deploys the EDI manager offered by the Actis company.

The EDI manager receives data from the different individual BOSCH application systems, converts it into the target format required by the supplier and transmits it to the individual receiver. Vice versa, the EDI manager is also used to receive data from the supplier, convert it into the BOSCH in-house format and send it to the corresponding BOSCH application system.

All of these activities are mainly operated without the need for a dedicated operator, fully automatic and 24 hours a day.



4.2. With the supplier (Partner)

4.2.1. Technical Conditions in the classic EDI

For classical EDI, the EDI partner must be able to send data in accordance with one of the mentioned standards using a structure and form harmonised by BOSCH; also, suppliers must have the required infrastructure to receive data correspondingly.

To communicate with Bosch via EDI, suppliers must have access via **ISDN** or **DATEX-P** and have installed the required **software for sending and receiving data** (EDI software) supporting the OFTP protocol.

Following a period of simultaneous EDI test operation to be agreed between partners, during which the EDI data is transmitted and received in addition to the traditional hardcopies, a dedicated EDI Agreement will be concluded between BOSCH and the supplier. After that, data transmission and receipt on paper will cease for the individual business case involved.

4.2.2. Technicals Conditions in the WebEDI SupplyOn

The supplier needs only a PC with Internet connection and a current Internet browser. No special software is demanded, but one calls a web application which is provided on a web server.

- We recommend as a minimal equipment:
 - a Pentium PC with at least 500 MHz of cycle frequency and 128 MByte of main memory,
 - a monitor with a resolution of at least 800x600Pixel and 256 colors,
 - an Internet connection (ISDN or modem) with a transfer rate of 33.600 bits per second
 - a 32-bit operating system (Windows 98, in 2000, XP, NT 4.0) or higher
- a 32-bit operating system (Windows 98, in 2000, XP, NT 4.0) or higher. SupplyOn WebEDI was optimized and tested for the Microsoft Internet Explorer version 6.0. Netscape Communicator 7.0 is also supported with if necessary limited functional character or Performance.

Also in the WebEDI **an EDI agreement** is concluded between the partners. Then the dispatch or reception is adjusted by paper for the arranged commercial incident.

5. Contact Partner EDI with BOSCH

In every contact with the EDI team the supplier must hold ready his **supplier's number (LNR)** as well as the appropriate **plant abbreviations (BWN)**.

Contact partner for changing, new arrangement or testing the communication connection EDI in the procurement:

Area	Name	Department	Telephone
E-mail			
QI/EDI-Team			
	Hr. Schmidt	CI/DAA25	0711/811-23972
	Stefan.Schmidt@de.bosch.com		
	Hr. Sprößler	CI/DAA25	0711/811-32667
	Alexander.Sproessler@de.bosch.com		
	Hr. Truong	CI/DAA25	0711/811-31584
	QuangHung.Truong@de.bosch.com		
	Fr. Herbst	CI/DAA25	0711/811-31414
	Katja.Herbst@de.bosch.com		
	Fr. Faulhaber	CI/DAA25	0711/811-46877
	SilkeFaulhaber@de.bosch.com		
	Hr. Bopp	CI/DAA25	0711/811-41560
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	Sibylle.Hoch@de.bosch.com		
	Hr. Döldissen	CI/OCI33	0711/811-45258
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	Winfried.Wenzel@de.bosch.com		
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	Corinna.Kling@de.bosch.com		