**OSI model**

In order for systems to communicate with each other a structured framework is necessary that makes it possible to connect together solutions from individual suppliers. This was the reason for the creation of the OSI-model (**O**pen **S**ystem **I**nterconnection). The OSI-model was developed by ISO and explains how the communication between any two systems works. As the name implies the purpose is to make systems open and with that supplier independent. Company specific systems make it impossible to communicate with equipment manufactured by other companies; these disadvantages are eliminated when you use a standardised protocol. Note that this is a model and not a protocol, its purpose is to explain and design networks that are flexible, robust and above all open.

**Structure of the OSI-model**

In 1983 the **I**nternational **S**tandards **O**rganization for (ISO) developed a model, OSI, (**O**pen **S**ystem **I**nterconnection Reference Model) for just this purpose. This defines all parts, structures and functions needed for communication and arranges these on 7 layers or levels, in order according to the different phases of the communication process.

Simplified, you can say that each layer (except the application layer) works so that it communicates with the adjacent layer. Further information, a header, is added to allow communication between the layers. This is necessary so that the underlying layer can interpret and manage the data. When the data reaches the receiver, each layer removes the added information (header) that the particular layer needs. The information is then sent on to the nearest layer above. When the information finally reaches the uppermost layer, all the extra information has been removed. Consequently, each layer communicates with the corresponding layer on the other computer.

Using the European V.24 standard as an example, this is a logical specification that is specified by the physical layer. It only defines the task of the lines: control, data and possible transmission rates. Hence the V.24 standard is supplemented with an electronic specification known as V.28, which is also a subset of the physical layer.
V.24 and V.28 have their counterpart in the American standard RS-232, which specifies the physical as well as the electrical interface.

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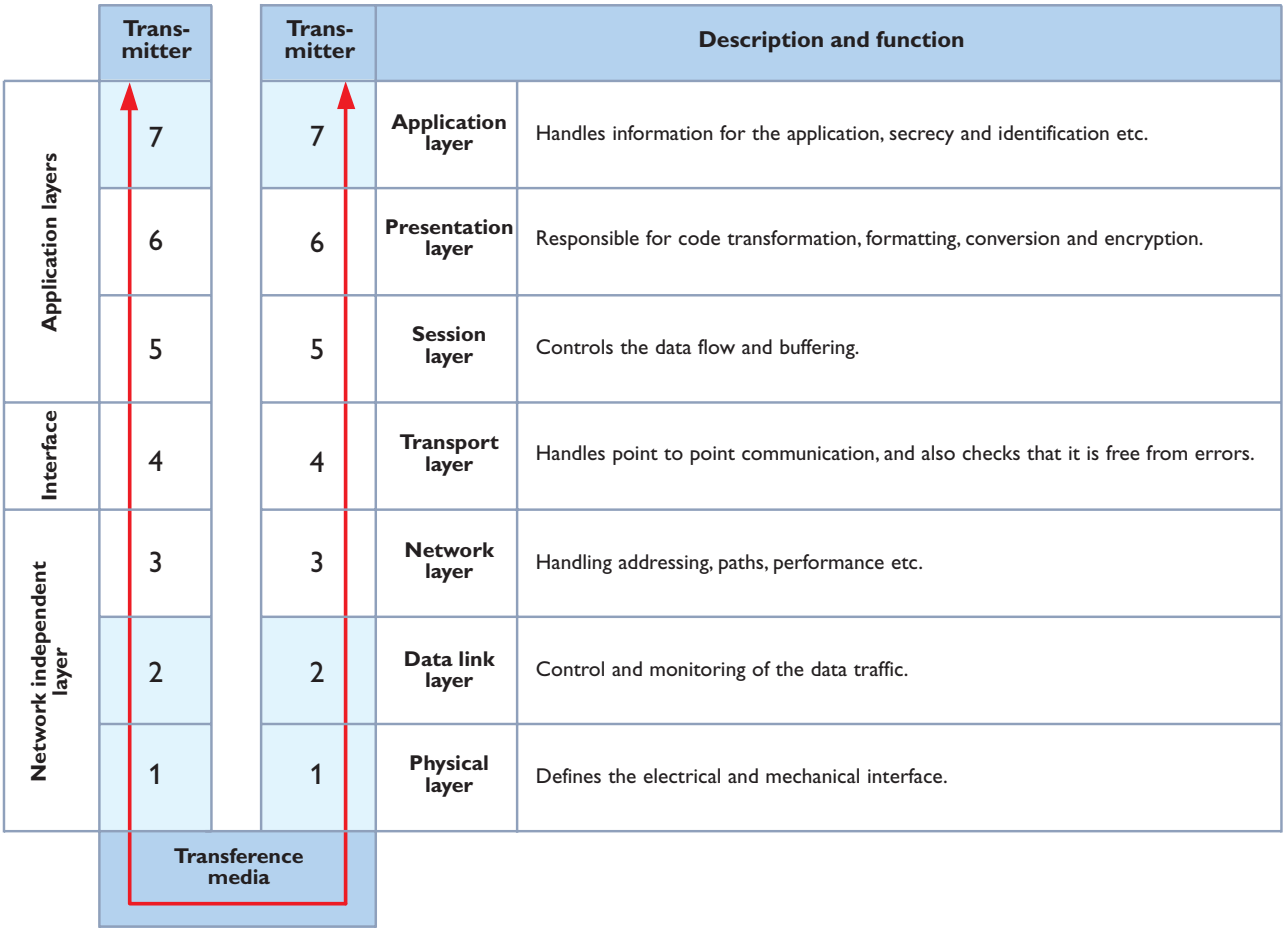

### A comparison

In order to give a clearer image of OSI we can make a comparison with an everyday telephone call.

- The physical layer is the telephone network and definitions of the signals that are transferred.
- The data link layer's logical link control (LLC) corresponds to the telephone's speaker and microphone. The link layer's media access control (MAC) corresponds to the components in the telephone that convert the microphone's signals to signals that the telephone can transmit on the network and the reverse for the speaker.
- The network layer corresponds to the telephone's key pulsing.
- The transport layer can be compared with when you call another subscriber you dial the telephone number and are then connected up through the transport layer, which ensures you make contact with the recipient.
- The session layer corresponds to the actual call.
- The conversation has its counterpart in the presentation layer.
- The application layer is the entire call.