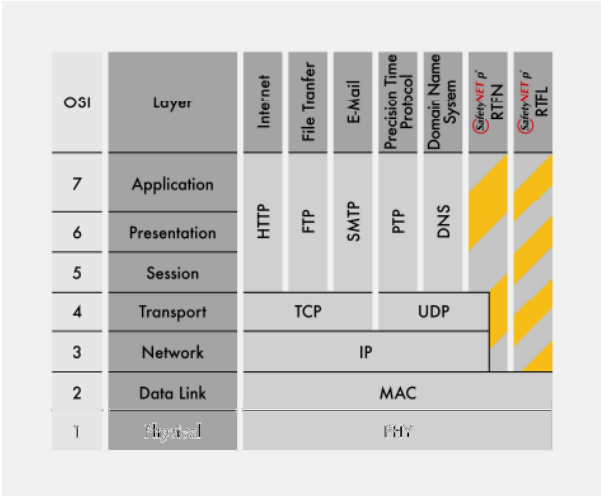


Ethernet in it's purest form – UDP based communication in SafetyNET p



Various levels in the automation pyramid have different demands on communication systems.

For this reason at SafetyNET p there are two different protocol variations available. SafetyNET p - RTFL is used for the hardcore real-time range, for example in the field of drives where guaranteed cycle times are in micro seconds. SafetyNET p – RTFN is required where standard Ethernet hardware is used, such as in office computers. Here is a short introduction to the RTFN protocol.

RTFN is used wherever real-time requirements are lower and standard

Ethernet hardware is applied, for example in office protocols. This is usually the case when office computers or control panels and observation devices, used for diagnosis or programming duties, have access to the automation network. RTFN is based on UDP / IP. This means that SafetyNET p data is sent in the form of a standard UDP telegram. The User Datagram Protocol (UDP) is a fractional, connection-free network protocol, which belongs to the transport level in the internet protocol family. The UDP's duty is to ensure that the data which is transferred through the company network or internet, reaches the correct application on the target computer. For this, the UDP uses so-called ports. The port number of the service which holds the data is sent alongside. With UDP it is also possible to send a proof total along, which enables incorrect data transferrals to be recognised. Telegram reiteration however, is not possible with the connection-free protocol, this must be undertaken by superior levels.

UDP/IP is also capable of routing further than the network borders. RTFN can be installed in a computer with a standard Ethernet card, therefore cutting back on special communication interfaces.

Coexistent use of RTFN is therefore also possible with other IP based industrial Ethernet variations. The use of Ethernet switches means the basis topology of RTFN is the star or tree topology. Safety-oriented communication is of course supported by both SafetyNET p variations, RTFN and RTFL.