

Railway connection.
Passenger flows.

A decorative horizontal bar consisting of a thick teal line at the top, followed by a white line, and then three thin teal lines below it, all extending across the width of the slide.

Railway communication systems

- As a leading manufacturer of components for external and internal lightning protection, DEHN has been involved in the development of technical solutions for mobile communication systems for several decades. The highest quality of products and many years of experience have allowed the company to become one of the main suppliers in the mobile communication market. The company's product range includes components for lightning protection, grounding and potential equalization systems, as well as numerous ultrasonic sensors for power supply systems and information technology equipment. In European countries, communication at railway facilities is carried out on the basis of the GSM-R platform (Global System for Mobile Communications-Railway - Global system of mobile communication on railways). The largest specialized companies participate in its development and implementation. To ensure long-range radio communication with high signal quality, radio masts with GSM-R equipment are usually installed in an open area. In this regard, to ensure reliable operation of communication systems, it is necessary to install professional external and internal lightning protection systems.



Types of wire communication

- *The following types of wired communication are used on the Russian Railways network:*
- **train dispatcher** — train talks to the dispatcher on duty at stations within its control range.
- **train interstation** — to negotiate the duty of the two adjacent split points.
- **Podstantsionnaya** — for official negotiations of the employees of the stations among themselves and sending telegrams to the linear station within the road Department
- **linear-track** — negotiations for employees of the track
- **trunk** — for the connection of Railways with roads and roads between them
- **road** — for service communication between the road management and departments, large stations, depots and among themselves
- **information** — for transmitting information about the approach of trains to the marshalling yard power
- **dispatcher** — for communication of the power dispatcher with traction substations and duty stations on the site.
- **station two-way park communication** -designed for notification and negotiations between employees of the railway station by means of stationary microphone speakers, speakers and other stationary devices.
- *In addition to wired communication, radio communication is also used on railways:*
- **station** — for providing two-way communication when conducting official negotiations between employees at the railway station by means of radio communication devices;
- **train**-for negotiations of locomotive drivers who are on the site with the station attendants and the train dispatcher.
- **shunting**-for conducting local negotiations of locomotive drivers, technical workers serving the station or node.

Passenger flows

- Passenger flow is the number of passengers who have traveled along a certain section of the route for a fixed period of time. The direction and size of the passenger flow depend mainly on the scheme of the street network, as well as on the relative location of the points of transport gravity of passengers.
- Passenger flows are characterized by types of trips that are divided into the following groups: labor (related to work and study), business (related to industrial and social activities), household (made to shops and household organizations), cultural (related to visiting stadiums, museums, cinemas, exhibitions, theaters) and trips to recreation places.



- The magnitude and direction of the passenger flow impact in addition to the configuration of the transport network and route design content of the rolling stock on certain sections of the route, speed, execution schedule, etc. the nature and formation of passenger flows largely depend on the driver. The size of passenger traffic is determined by the size of the population and the degree of its mobility. The average mobility of the city's population is determined by dividing the number of passengers transported during the year by the population of the city. A resident can make a targeted trip around the city from the place of departure to the destination by one route without a transfer, two routes with a transfer, etc. In the first case, one route trip will be considered, and it will be counted as transportation of one passenger, in the second case, two route trips will be counted as transportation of two passengers. Knowing the average mobility of the population, you can determine the annual number of passengers. The volume of traffic is determined not only by the number of passengers, but also by the average length of the passenger's journey. The average length of a passenger's journey along routes for each mode of transport and on individual routes is derived from the data of a ticket or survey. Usually, the longer the route, the longer the average passenger's journey length. The average length of a passenger's trip depends on the layout of the city, the location of objects of transport gravity, fares, the length of routes and their



Thanks for attention

