

TMB Transports Metropolitans De Barcelona Sa (Spain):
Metro network operator.

The control architecture, the prediction models as well as hardware components compose the SEAM4US system, which is installed in a pilot station in Barcelona (Spain). The following section gives more details about the pilot station.

Pilot Station "Passeig de Gràcia - Line 3"

The SEAM4US system is implemented in the pilot station Passeig de Gràcia - Line 3 (PdG-L3), which is a station within TMBs metro network in Barcelona. This section describes the station more in detail. Before the difference between "line stations" and "metro stations" is pointed out.

In general, a metro network consists of one or more metro lines. Each line has a defined railway with a given number of stops to allow passengers to get on or off the trains. Each of these stops is called "line station". In contrast, a "metro station" represents the point in space through which passengers get underground and into a line station. Metro station and line station can be the same physical entity, but it is possible that a metro station holds more than one line stations.

As mentioned (line) station PdG-L3 serves as pilot station. In the following, details about the metro station Passeig de Gràcia (PdG) are given, followed by details about the pilot (line) station PdG-L3.

The metro station PdG lies in the iconic and touristic part of Barcelona. Some popular buildings designed by Antoni Gaudí (Casa Batllò, Casa Milà) as well as the city's most renown and exclusive boutiques are in the proximity. The

metro station is one of the oldest of the Barcelona metro network. First opened in December 1924, as station for Line 3 (L3), nowadays PdG holds three different line stations: Line 2, Line 3, and Line 4. The line stations were built in three different periods, using different construction technologies. All line stations have been refurbished a few times since 1924, and new equipment has been added recently. Depending on the weekday PdG is open 19 hours, 21 hours, or 24 hours. Between Monday and Thursday PdG service starts at 5:00 and ends at 24:00 (19 hours). Friday service starts at 5:00 and ends at 2:00 (21 hours). On Saturday service starts at 5:00 too but remain the entire night and day until Sunday midnight. Figure 1 depicts an entrance/exit of metro station PdG.

PdG-L3 was as pilot station selected since it turned out to be representative for many station within TMBs metro network [3]. The count of fans, escalators, and the platform schema is comparable to other stations. Moreover, PdG-L3 is a crowded station which have low-rate usage hours as well. Therefore a wide range of data are available, that allows to test with very busy peak hours as well as with off-peaks.

Spaces

The line station PdG-L3 consists of private (staff only) and public spaces. Private spaces such as technical rooms or staff dependencies are not part of the investigation of the SEAM4US project, whereas public spaces, such as halls, transit areas, accesses to the platforms, and platforms are, in the focus for the energy efficient control. The platforms are a essential part of (every) line station, since it allows passengers to leave and enter the trains. For the passenger model it is essential because every passenger who uses the line station is visible here. PdG-L3 laid out on a PRRP schema - Platform-Rail-Rail-Platform.



Figure 1: Passeig de Gràcia
Entrance/Exit Gran Via. [3]