MAN eManager S service description

General information

MAN eManager S is a charging-management service that enables users to plan departure times for their vehicles in advance. Particularly in the event of extreme temperatures, and where required, optional preconditioning (preheating) of the passenger area can help to prevent a reduction in the remaining range due to the air conditioning. It ensures that the passenger area is at an appropriate temperature when the bus leaves the depot.

The user can choose between immediate and timer-based charging management options.

With immediate charging, the vehicle will always start to charge as soon as it is connected to a charging station with power available. In the RIO system's overview, the user will see how long the vehicle battery will continue to charge before reaching its 100% SoC after connection to a charging station.

With timer charging, the user can save various departure times for each vehicle, according to their schedule. The next due departure time is transmitted to the vehicle. If the vehicle is connected to a charging station, the charging process is automatically started at the optimum time to ensure that the vehicle is ready for operation at the time of departure. If the vehicle is connected to a charging station shortly before the departure time, charging will start automatically, although the vehicle might not be ready for operation at the intended departure time. In this case, among other things, the user will see the new, delayed departure time in the RIO system's overview. At the end of the charging process, the next due departure time will be transmitted to the vehicle.

If a charging fault should occur in immediate or timer charging, and this information is available for the vehicle, the user will be notified accordingly in the RIO system.

As well as charging management, the user can also view important information about the battery such as the charging status (not connected, connected, charging, charged, fault, unknown), the battery charge level in % and the electric range in km.

MAN eManager S can be ordered for the MAN Lion's City E.
In order for the service to be operational, it is necessary for the vehicle to be contactable via a wireless connection for the requisite configuration.

Service overview

After MAN eManager S has been successfully activated, the following MAN eManager S services will be available for use:

Functionality/data Overview of all electric vehicles (for which the MAN eManager S has been ordered) in the fleet in a table containing the following information:	**MAN Lion's City E**
Battery charge level / State of Charge (SoC) in % (interval: 5 min)	X
Estimated remaining range in km (Frequency: 5 min)	X
HV battery charging status displayed for each vehicle:	
Not connected (vehicle is not connected to a charging station)	X
Connected (vehicle is connected to a charging station)	X
Charging (vehicle is connected to a charging station and is charging)	X
Charged (vehicle is connected to a charging station and has finished charging)	X
Fault (vehicle is connected to a charging station and has encountered a fault while charging)	X
Unknown (the current charging status is unknown)	X
Remaining charging time display	X
Charging configuration saved or accepted by vehicle display	X
Display of readiness after completion of charging process	X
The following vehicle functions are independently initiated by MAN eManager S when an appropriate selection is made in your vehicle's RIO system: Setting of the HV battery's charging configuration for each vehicle in the RIO system (The vehicle always charges until the battery's state of charge is 100%) When selecting the charging mode: **1. Immediate charging** In this configuration, the vehicle will always start to charge once it is connected to a charging station with power available **2. Timer charging** In this configuration, the user can add multiple timers, whereby each timer contains at least one weekday and precisely one departure time When selecting air conditioning mode: For each vehicle, the user can set preconditioning (preheating) of the passenger area for immediate charging (on/off). This can cause the vehicle to draw more energy from the charging station.	X

Prerequisite for data transmission

MAN Lion's City E

If the vehicle status is not "Ignition on" or "Charging", it can receive new charging configurations approximately every **60 minutes**. Thus, it can take up to **60 minutes** after sending a charging configuration before it is received by the vehicle and a feedback signal is sent to the RIO system.

If the vehicle does not have a mobile communication connection, for example due to the network being down, it is not possible for the charging configuration to be transmitted. In this case, and at any other time, the user can initiate immediate charging on the vehicle itself.

Information about the battery charge level and the estimated remaining range is transmitted cyclically at 5 minute intervals and is displayed in the RIO system. Transmission of all other information such as the charging status (not connected, connected, charging, charged, fault, unknown), the readiness display and the remaining charging time display to the RIO system and display in the system are event-based.

Technical requirements

To be able to use MAN eManager S, the vehicles must have the following features:

	MAN Lion's City E
Use of a RIO Box (provision not covered by the Service T&Cs)	X
VCM (Vehicle Connectivity Manager)	X
ePTM (electric Power Train Manager)	X

User work place equipment:

- Use of an Internet-capable device such as a computer (not provided by RIO) running the Windows 7 operating system or later
- Internet browser (we recommend using the latest version of the following browsers: Google Chrome, Mozilla Firefox, Microsoft Internet Explorer, Microsoft Edge. We cannot guarantee unrestricted functionality if using other browsers.)