CLAIMS

1. A mobile object communication system comprising:

a mobile object side device used in a mobile object;

a service provision device that performs a short range wireless communication with the mobile object side device to provide a predetermined service to the mobile object side device, wherein the short range wireless communication adopts one of a plurality of types of service channels preliminarily allocated for provision of services by the service provision device and a control channel that is a communication channel different from all of the plurality of service channels and used for a connection control of the short range wireless communication, and the predetermined service is one of the services provided by the service provision device; and

a wide area route provision unit that provides each of the services provided by the service provision device by performing a communication through a wide area communication network in response to a request from the mobile object side device,

wherein

the service provision device sequentially transmits, using the control channel, service start information that notifies each of the services provided by the service provision device,

the mobile object side device includes:

a mobile object side wide area communication unit that performs the communication through the wide area communication network;

a mobile object side short range communication unit that performs the short range wireless communication with the service provision device and receives the service start information transmitted from the service provision device;

an unprocessed service management unit that holds, as unprocessed services, one or more of the services which is not yet used among the services notified by the service start information, wherein the service start information is received by the mobile object side short range communication unit;

a service selection unit that selects a service to be used from the unprocessed services held by the unprocessed service management unit; and

a communication availability determination unit that determines whether the short range wireless communication can be performed with the service provision device that provides the service selected by the service selection unit, and

when the communication availability determination unit determines that the short range wireless communication cannot be performed with the service provision device providing the service selected by the service selection unit, the mobile object side device uses the service selected by the service selection unit by controlling the mobile object side wide area communication unit to perform the communication through the wide area communication network with the wide area route provision unit.

2. The mobile object communication system according to claim 1, wherein

the mobile object side device further includes a reception strength acquisition unit that acquires a reception strength of a signal corresponding to the service start information received by the mobile object side short range communication unit,

the unprocessed service management unit holds the reception strength, which is acquired by the reception strength acquisition unit from the service start information, in association with one of the services indicated by the service start information, and

the communication availability determination unit determines, based on the reception strength associated with the service selected by the service selection unit, whether the short range wireless communication can be performed with the service provision device that provides the service selected by the service selection unit.

3. The mobile object communication system according to claim 1 or 2, wherein

the unprocessed service management unit acquires an assumed traffic which is an assumed value of a data traffic occurring when using each of the services, and

the service selection unit selects, with a higher priority, a service having a larger assumed traffic than others as the service to be used.

4. The mobile object communication system according to any one of claims 1 to 3, wherein,

when the mobile object side short range communication unit receives the service start information in a state where the unprocessed service management unit does not hold the unprocessed services,

the mobile object side short range communication unit continues a state where the control channel is set as a transmission and reception channel for a service collection duration which is defined as a predetermined time period from a time of receiving the service start information to a time of receiving another information on another service, and

the service selection unit selects the service to be used based on one or more service start information received during the service collection duration.

5. A mobile object side device employed in a mobile object communication system, wherein

the mobile object communication system includes:

the mobile object side device used in a mobile object;

a service provision device that performs a short range wireless communication with the mobile object side device to provide a predetermined service to the mobile object side device, wherein the short range wireless communication adopts one of a plurality of types of service channels preliminarily allocated for provision of services by the service provision device and a control channel that is a communication channel different from all of the plurality of service channels and used for a connection control of the short range wireless communication, and the predetermined service is one of the services provided by the service provision device; and

a wide area route provision unit that provides each of the services provided by the service provision device by performing a communication through a wide area communication network in response to a request from the mobile object side device, and

the service provision device sequentially transmits, using the control channel, service start information that notifies each of the services provided by the service provision device,

the mobile object side device comprising:

a mobile object side wide area communication unit that performs the communication through the wide area communication network;

a mobile object side short range communication unit that performs the short range wireless communication with the service provision device and receives the service start information transmitted from the service provision device;

an unprocessed service management unit that holds, as unprocessed services, one or more of the services which is not yet used among the services notified by the service start information, wherein the service start information is received by the mobile object side short range communication unit;

a service selection unit that selects a service to be used from the unprocessed services held by the unprocessed service management unit; and

a communication availability determination unit that determines whether the short range wireless communication can be performed with the service provision device that provides the service selected by the service selection unit,

wherein, when the communication availability determination unit determines that the short range wireless communication cannot be performed with the service provision device providing the service selected by the service selection unit, the mobile object side device uses the service selected by the service selection unit by controlling the mobile object side wide area communication unit to perform the communication through the wide area communication network with the wide area route provision unit.