

**Telefónica I+D**  
**OSGi Remote Management**

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**TELEFÓNICA I+D**

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## OSGi relevance on the Home Gateway world

- Telefonica is very interested in the management of home networks and devices. It's a key issue to deploy advance services at home with reasonable costs.
  - Our point of access to the home today is the DSL modem/router. Soon it will be the device called Home Gateway.
- We believe in the OSGi platform as a key technology to deploy services at home...
  - ...but many others operators doesn't.
- Home Gateway Initiative experience:
  - Too expensive to put an OSGi stack on that kind of devices
  - The first release of the specification doesn't include an OSGi framework
- Research projects experience:
  - There are some gateways in the market that includes and OSGi framework, together with DSL modem/router functionalities. But they are very constrained in resources.

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## Home Gateway management issues

- Until now we have worked with open source or our own solutions:
  - Based on Web Services or JMX (Java management extensions).
- But we shouldn't duplicate management infrastructure on the limited devices we have as OSGi enable Home Gateway:
  - They usually have a TR-069 client to be managed
  - The OSGi framework is not aware of this client (we couldn't add management information)
- Some standardization could help to obtain products with OSGi integrated management through TR-069 protocol.
- Maybe someone is working on that out there, and we aren't aware off... we would like to know about it.

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## Other devices

- The Home Gateway is the most important device today for us
  - But our objective is to manage all the devices connected to the home networks.
- All kind of OSGi enable devices at home should be manageable too:
  - OSGi mobile devices already have their management solution through OMA-DM and the extension defined in the OSGi MEG.
  - Other devices could be manageable through TR-069 or OMA-DM.
- We are aware that other scenarios exists, and maybe solutions with JMX or other technologies could be required

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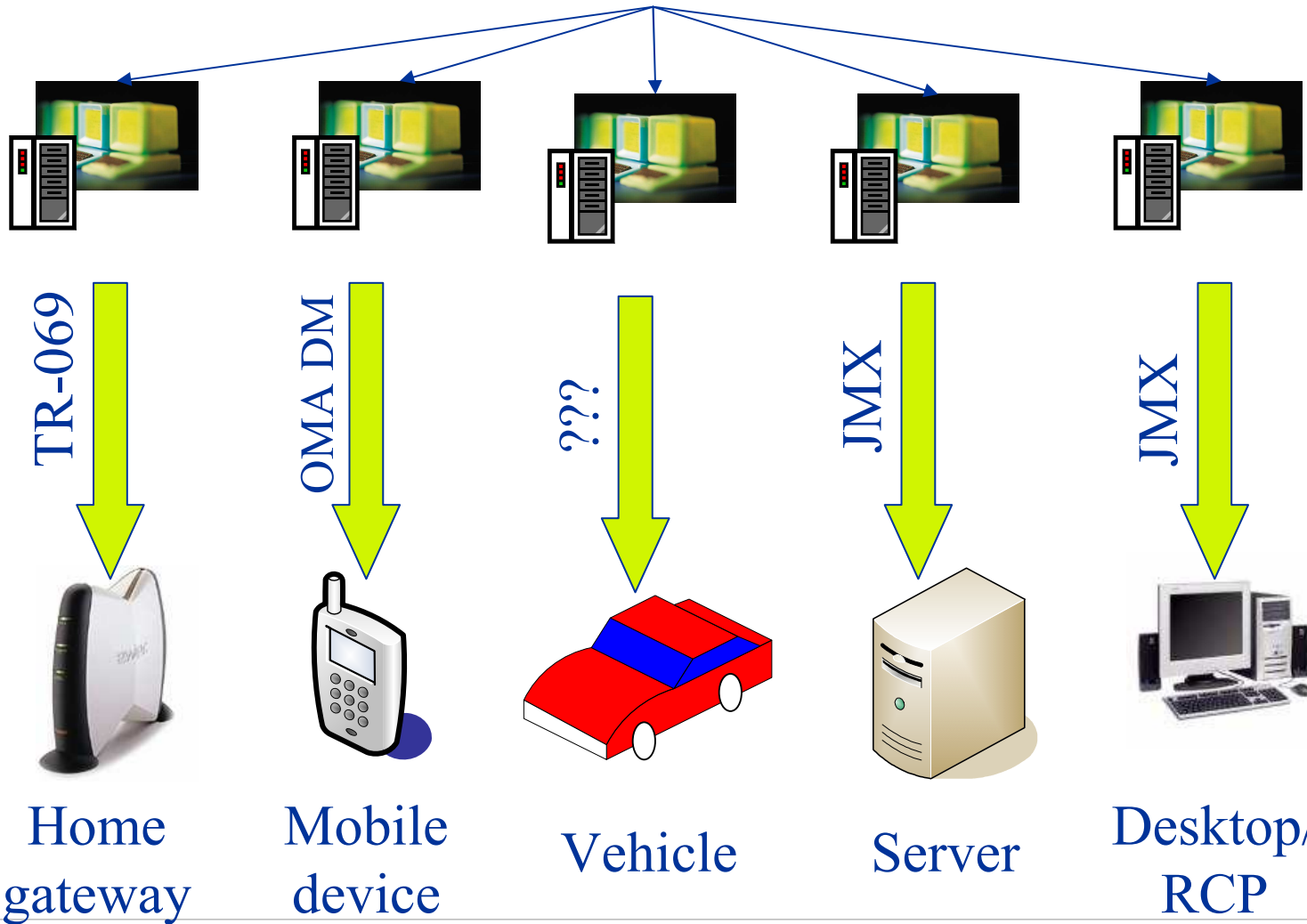
## Other scenarios

- OSGi is being applied in several domains
- Each domain has own solution for remote management
  - Home Gateways: ADSL-Forum TR-069
  - Mobile Devices: OMA Device Management
  - Server: JMX (Java Management Extensions)
  - Desktop/RCP (Rich client platform): JMX
  - Vehicle: no standards (¿maybe to use mobile device solutions?)

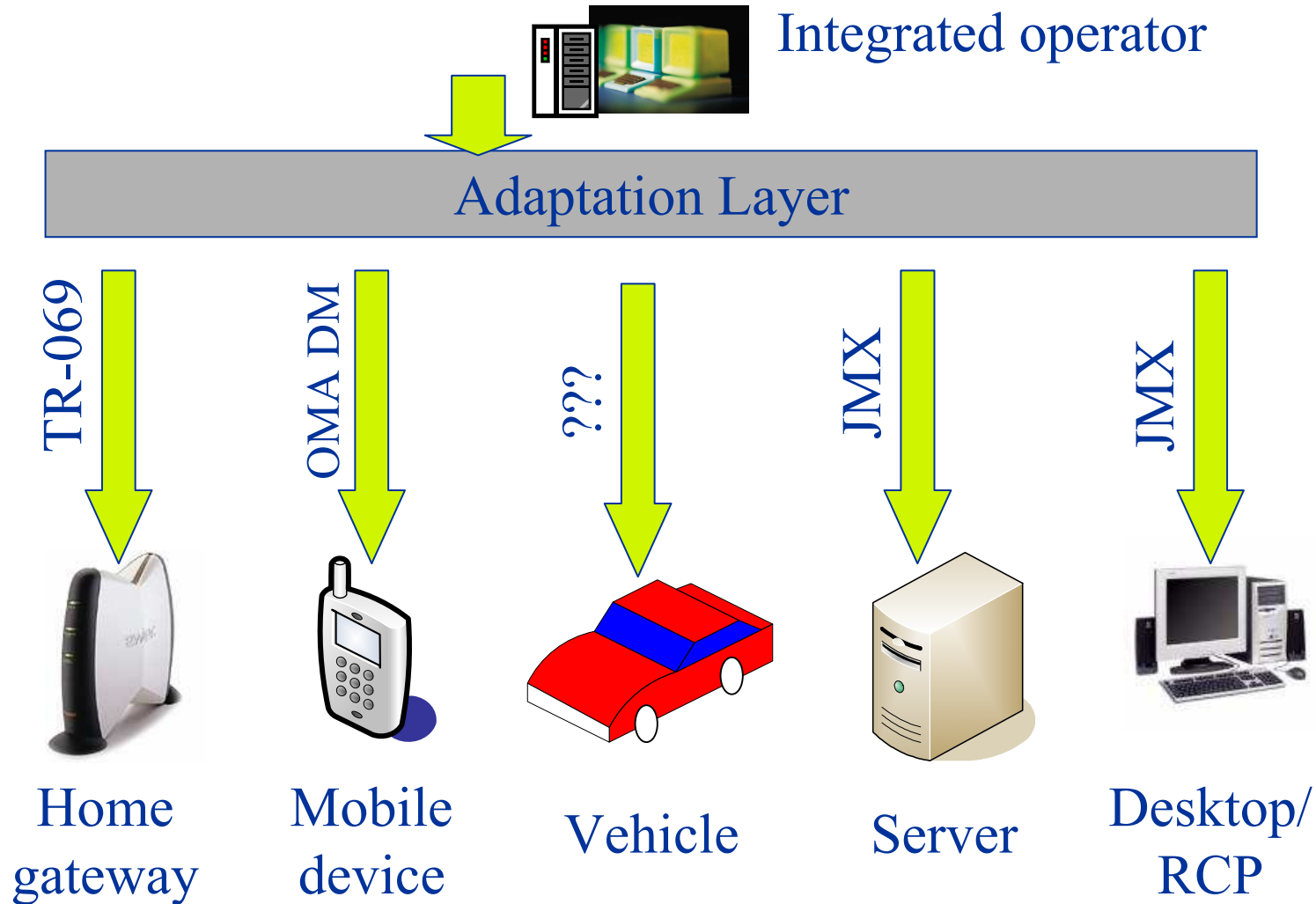
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## Short term

Independent operators

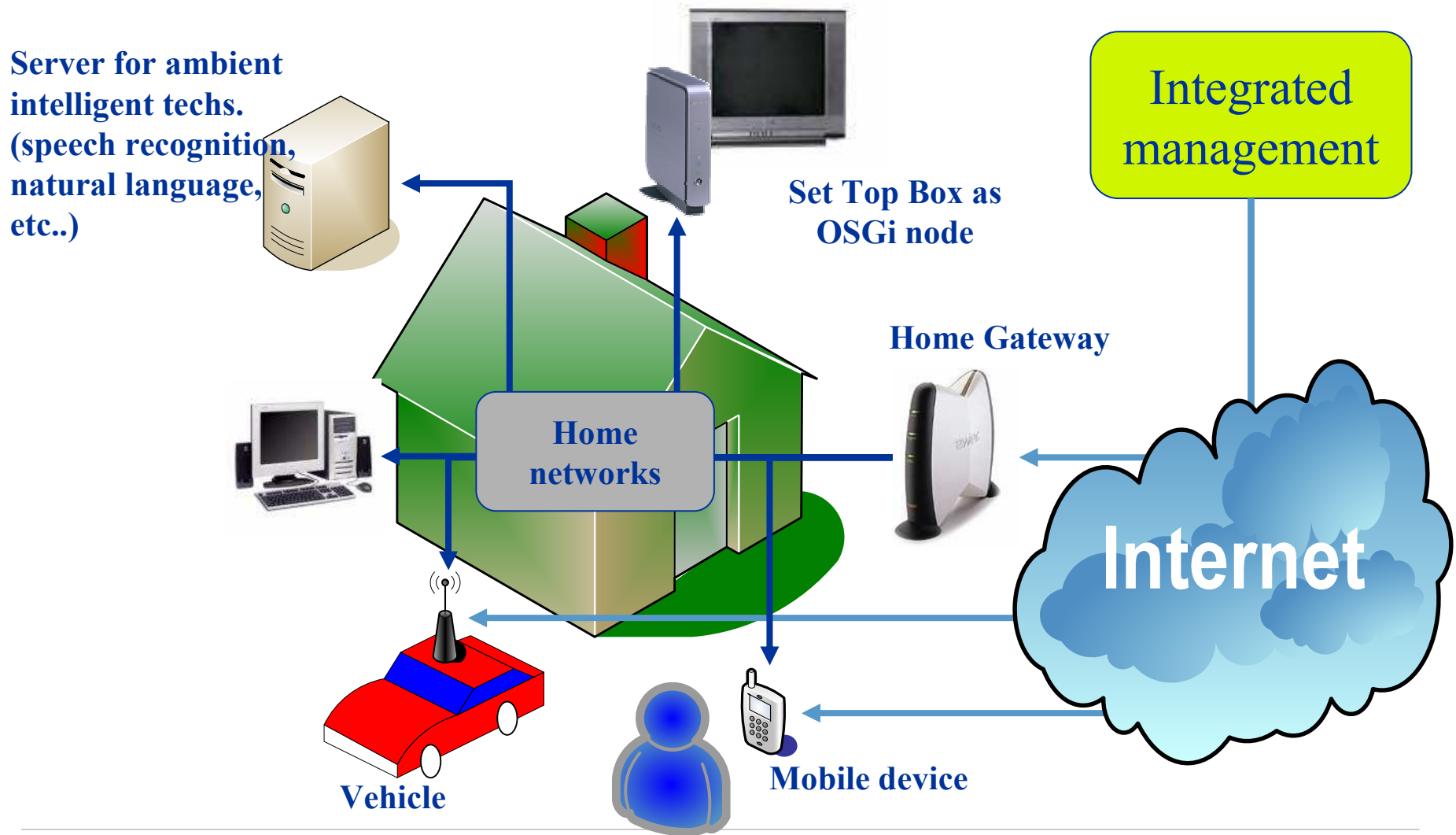


# Telefónica I+D medium/large term



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## Home scenario with integration of several OSGi devices



# Telefónica I+D Requirements

- To define what should be managed for all kind of OSGi nodes:
  - Deployment, life cycle, configuration, log, events... (to study)
- To map this information to different domains:
  - OSGi MEG already have their solution for OMA-DM
  - We are specially interested on the TR-069 mapping
- Other general requirements:
  - transactions
  - security
  - scalability

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