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| Input contributionUse case |
| Use Case Title:\* | Use cases for machine socialization |
| Group Name:\* | WG1 |
| Source:\* | CMCC |
| Contact: | Yawen Niu (niuyawen@chinamobile.com)Zhang Yong (zhangyongyj@chinamobile.com) |
| Date:\* | 2014-09-25 |
| Abstract:\* | Propose to add the use case illustrates that, in real world, machines need to cooperate with each other to perform a specific task or multiple tasks. This is kind of abilities just like human socialization.  |
| Agenda Item:\* |  |
| Work item(s): | WI 0015 - oneM2M Use Case Continuation |
| Document(s) Impacted\* | Technical Specification TR 0001 - oneM2M Use Case Technical Report |
| Intended purpose ofdocument:\* | [x]  Decision[x]  Discussion[ ]  Information[ ]  Other <specify> |
| Decision requested or recommendation:\* | Approval of the Use Case |

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* 1. **Title**

Use cases for machine socialization.

* 1. **Description**

A robot is designed to clean rooms in hotel. The task of the robot is to keep all rooms clean. If the hotel has only one robot, it has to clean rooms one by one. If the hotel has two robots, they will complete the task more efficiently if they cooperate with each other. If robot A has cleaned a room, it may inform the other robot that this room has been cleaned, so robot B can move to another room for clean job. This implies that if multiple robots share a same task, cooperation will improve the efficiency. As in the hotel scenario, the robots owner may not tell the robots explicitly that there exists another robot with the same task. So, firstly, the robot must have the capability to discover other robots and find out if they share the same task as itself. Secondly, a robot must realize what kind information will effect other robots behaviour, and it must transmit messages in order to share these information to other co-operators. For example, after a machine scan a room, it will find out the clean status of that room (clean or dirty), when a robot is cleaning a room or after it is cleaned, it will change the status of that room, the information will effect other robots’ behaviour, because for any other robots it is unnecessary to go to a room that is being cleaned or has been cleaned by another robot. Thirdly, a robot must have the knowledge about the message interface of other robots. Only with this knowledge, it can send inform or command to another robots.

A cloud robot service platform may play an important role in this hotel scenario. Because the platform may help robots to discover each other, and the platform may initialize a powerful commander to optimize the job with multiple robots.

* 1. **Source**

CMCC

* 1. **Actors**
* The clean robot is designed to keep all rooms clean. They may cooperate with each other directly or with the help of cloud robot service platform.
* Cloud robot service platform can discover the underline cooperation between machines.
	1. **Pre-conditions**
* Multi-robots share the same tasks or correlated tasks.
	1. **Triggers**
1. A robot discover another robot with the same or correlated tasks.
	1. **Normal Flow**
* A robot A is deployed in a hotel.
* Another robot B is deployed in a hotel.
* Robot A&B discover each other (the discovery is performed by themselves or aided by the cloud robot service platform)
* Robot A share information to robot B and Robot B share information to Robot A.
* The cloud robot service platform help to optimize the task process and help the robots to cooperate with each other.
	1. **Post-conditions** (if any)

NONE.

* 1. **High Level Illustration (**as applicable)



* 1. **Potential requirements (as applicable)**
* A M2M infrastructure shall be able to support the machine socialization functionalities, such as existence discovery, correlated task discovery, message interface discovery and process optimization for multiple machines with same tasks.