

ITRI

MCS Communication Message Spec

V1.1 draft

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內容

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修訂追蹤			
版本	狀態	修改紀錄	
1.0	draft	第一版草案 1. 修改車輛名稱 2. 新增車輛位置 3. 新增車輛充電狀態 4. 新增頂升平台狀態	Johnson
1.1	Modify		Johnson

1、 通訊概要

1 RabbitMQ

使用rabbitmq, 採用work queue的方式, 請參考

<https://www.rabbitmq.com/tutorials/tutorial-two-python.html>

發送命令queue name: “work_queue_to_MCS”

接收狀態queue name: “work_queue_to_MES”

server IP: 依現場環境

版本: RabbitMQ 3.8.11, Erlang 23.2.3

2、 資料格式

2 JSON格式

消息傳遞之間採用JSON格式。

3、 封包架構

內文開頭由spec與版本號(version)描述所參照的版本, 以及文件標頭描述該封包的資訊欄位

可參考以下內文描述

1. spec
2. version
3. head
4. data

```
{  
  "spec": "MCS Communication Message Spec",  
  "version": "1.0",  
  "head": {  
    "date": "2020-01-01 23:59:59.999",  
    "uuid": "b6b11e0c-1764-11eb-adc1-0242ac120002",  
    "priority": 2,  
    "agent": "MES"  
  },  
  "data": {  
    "command": "transfer",  
    "params": {  
      "operator": "someone",  
      "fromPort": "v1",  
      "toPort": "v3",  
      "carrierID": "CARRIER1",  
      "status": "OK"  
    }  
  }  
}
```

```
        "carrierType": "MAGAZINE"  
    }  
}
```

3 Head 表頭資訊

- (1) date : YYYY-MM-DDTHH:MM:SS,fffffffff
- (2) uuid : uuid
- (3) priority : 1-3,
- (4) agent: “MES”,

example:

```
"head":{  
    "date":"2020-01-01 23:59:59.999",  
    "uuid":"b6b11e0c-1764-11eb-adc1-0242ac120002",  
    "priority":2,  
    "agent":"MES"  
}
```

4 Data 資料內容

4.1 命令

4.1.1 Transfer

AGV move to A, load carrier, and move to B, unload carrier.

- a. command: "transfer"
- b. params: operator, fromPort, toPort, carrierID, carrierType
 - i. operator: user id of current user
 - ii. fromPort: port of from location.
 - iii. toPort: port of to location.
 - iv. carrierID: magazine ID. This is non-zero string like CARRIER1.
 - v. carrierType: MAGAZINE

```
{
  "data": {
    "command": "transfer",
    "params": {
      "operator": "someone",
      "fromPort": "v5",
      "toPort": "v12",
      "carrierID": "CARRIER1",
      "carrierType": "MAGAZINE"
    }
  }
}
```

4.1.2 Go charge

AGV go to charge.

- a. command: "go_charge"
- b. params: vehicleID, operator, destination
 - i. vehicleID: I001MR
 - ii. operator: user id of current user
 - iii. destination: the location of charging station

```
{
  "data": {
    "command": "go_charge",
    "params": {
      "vehicleID": "I001MR",
      "operator": "someone",
      "destination": "v4"
    }
  }
}
```

4.1.2 Stop charge

AGV stop charge.

- c. command: "stop_charge"
- d. params: vehicleID, operator
 - i. vehicleID: I001MR
 - ii. operator: user id of current user

```
{  
  "data": {  
    "command": "stop_charge",  
    "params": {  
      "vehicleID": "I001MR",  
      "operator": "someone"  
    }  
  }  
}
```

4.2 狀態回復

4.2.1 Vehicle deposit completed

AGV unload carrier completed at location B.

- a. typename: "vehicle_deposit_completed"
- b. params: vehicleID, carrierID, toPort
 - i. vehicleID: I001MR
 - ii. carrierID: magazine ID like CARRIER1
 - iii. toPort: location of to port.

```
{  
  "data": {  
    "typename": "vehicle_deposit_completed",  
    "params": {  
      "vehicleID": "I001MR",  
      "carrierID": "CARRIER1",  
      "toPort": "v12"  
    }  
  }  
}
```

4.2.2 Vehicle update vertex

Update the vertex of the AGV when it moves.

- a. typename: "vehicle_update_vertex"
- b. params: vehicleID, vertexName
 - i. vehicleID: I001MR

ii. vertexName: the location of AGV, just like v5, v6, ...etc.

```
{
  "data": {
    "typename": "vehicle_update_vertex",
    "params": {
      "vehicleID": "I001MR",
      "vertexName": "v5"
    }
  }
}
```

4.2.3 Vehicle charging status

The status of AGV charging.

- a. typename: "vehicle_charging_status"
- b. params: vehicleID, status
 - i. vehicleID: I001MR
 - ii. status:
 - 1. START: AGV start charging
 - 2. FINISHED: AGV finish charging
 - 3. FAILED: AGV fail to charge

```
{
  "data": {
    "typename": "vehicle_charging_status",
    "params": {
      "vehicleID": "I001MR",
      "status": "START / FINISHED / FAILED"
    }
  }
}
```

4.2.4 Lift status

The status of lift on the AGV.

- a. typename: "lift_status"
- b. params: position
 - i. position: HIGH/LOW

```
{
  "data": {
    "typename": "lift_status",
    "params": {
      "position": "HIGH / LOW"
    }
  }
}
```

}