EC-API

(Elevator Call API)

Solution Validation Test Guide

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# Document History

|  |  |  |
| --- | --- | --- |
| Date | Description | Author |
| Feb 15.2021 | KONE Elevator Call API 1.0.0 | KONE API Support |
| Nov 08, 2021 | updated with new developer experience | KONE API Support |
| August 05 2022 | KONE Elevator Call API 2.0 | KONE API Support |
| July 28 2023 | Test cases improvements | KONE API Support |

# Document Purpose

Ensuring the quality and security of a solution is every developer’s responsibility. This document gives guidance on evaluating the readiness of those solutions that use Elevator Call API. Practical examples of the expected testing support you in the validation. You can also use this guide as a template for documenting test results.

The test environment used in these test scenarios has been designed to resemble an elevator setup in a building. Solution validation is needed before connecting a solution to KONE equipment.

# Abbreviations

|  |  |
| --- | --- |
| Abbreviation | Description |
| ACS | Access control server |
| COP | Car operation panel |
| DCS | Destination Control System |
| DOP | Destination operation panel |
| ETA | Estimated time of arrival. Time it will take for a solution user to get to the elevator. |
| LCS | Landing call station |
| EC-API | Elevator Call Application Programming Interface |

# Tested Solution

## Date

|  |  |
| --- | --- |
| Test Date (dd.mm.yyyy) |  |

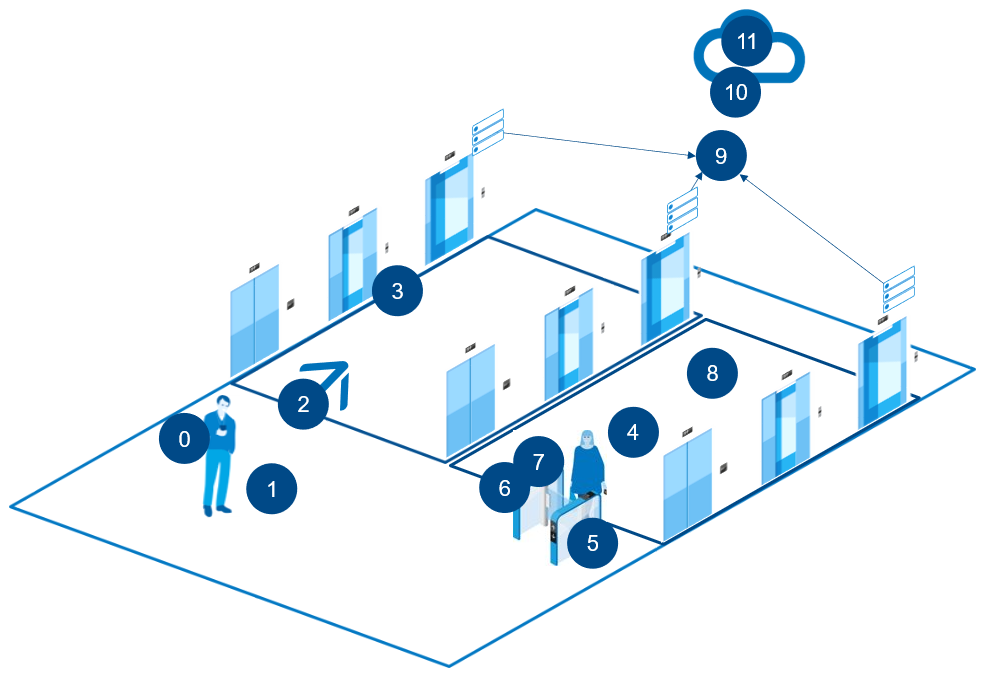
## Solution Provider

|  |  |
| --- | --- |
| Company name |  |
| Company address |  |
| Contact person name |  |
| Email |  |
| Telephone number |  |
| Tester |  |

## Tested solution

|  |  |
| --- | --- |
| System name: |  |
| System version: |  |
| Software name: |  |
| Software version: |  |
| KONE EC-API: | v2.0 |
| KONE test assistant email |  |

# Recommended Solution Design Flow



|  |  |
| --- | --- |
| Flow | Description |
| 0 | Power saving |
| 1 | User is within an acceptable proximity to the elevator |
| 2 | Directional tracking if automatic call is to be generated |
| 3 | Multiple calls prevention for automatically generated calls |
| 4 | User detection behind a barrier such as turnstile |
| 5 | Barrier control such as turnstile gate if no other system operates it |
| 6 | Integration to access control system for calls generated at barrier passage by access control system |
| 7 | Integration to access control system for calls generated at barrier passage by mobile app |
| 8 | Integration to access control system for personalized DCS calls generated by mobile app |
| 9 | Multiple elevator banks support |
| 10 | Cybersecurity measures |
| 11 | Logs |

# Elevator Call API Solution Validation Test Guide

This test focus on making elevator calls with Elevator call API.

## Setup

|  |  |
| --- | --- |
| Pre-Test Setup | Get access to the equipment for testing   * Virtual equipment, available in KONE API portal * Preproduction equipment, by contacting KONE API Support (api-support@kone.com) |
| Expected result | * Test environments available for the correct KONE API organization. * Building id can be retrieved (/resource endpoint). |

|  |  |
| --- | --- |
| Test 1 | Solution initialization |
| Expected | * Connections established by solution to test environment (Virtual or Preproduction).   + Authentication successful   + Get resources successful * Building config can be obtained.   + Response code 200   + Response code 401 in case if there is issue with API Credentials * Building actions can be obtained.   + Response code 200   + Response code 401 in case if there is issue with API Credentials |
| Test result |  |

## Elevator Call Giving

|  |  |
| --- | --- |
| Test 2 | Call: Basic call - > Source: any floor, Destination: any floor  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking   + Floor markings are as expected   + Floor order is as expected   + User is notified about the elevator arrival status or elevator call status.   + Elevator destination is correct as requested |
| Test result |  |

|  |  |
| --- | --- |
| Test 3 | Call: Exit floor call - > Source: any floor, Destination: any floor (exit floor of the building).  Note: Landing Call – Source only as the building ground floor, Car Call – Destination only as the building ground floor |
| Expected result | * Call accepted and elevator moving   + Response code 201   + Session id returned * Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Test 4 | Call: Action call with action id = 200, 0 [Unlisted action (range as in action payload)] - > Source: any floor, Destination: any floor.  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Option 1   + Illegal call prevented by user interface * Option 2   + Call allowed and Call cancelled     - Status code 201     - error message - " Ignoring call, unknown call action: {action id}"     - error message - " Ignoring call, unknown call action: UNDEFINED" if 0 |
| Test result |  |

|  |  |
| --- | --- |
| Test 5 | Call: Disabled action call with action id = 4 [listed enabled action (range as in action payload)] - > Source: any floor, Destination: any floor.  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Option 1   + Illegal call prevented by user interface * Option 2   + Call allowed and Call cancelled     - Status code 201     - error message - " Ignoring call, disabled call action: {{actionid}}" |
| Test result |  |

|  |  |
| --- | --- |
| Test 6 | Call: Mixed action call with action id = 2002 - > Source: any floor.  Note: This is applicable for Landing Call only. Elevator at first floor and direction down |
| Expected result | * Option 1   + Illegal call prevented by user interface * Option 2   + Call allowed and Call cancelled     - Status code 201     - error message - "INVALID\_DIRECTION " |
| Test result |  |

|  |  |
| --- | --- |
| Test 7 | Call: Delay call with delay = 5 - > Source: any floor, Destination: any floor  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Test 8 | Call: Delay call with delay = 40 [Invalid delay (range 0-30sec)] - > source: any floor, Destination: any floor  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Option 1   + Illegal call prevented by user interface * Option 2   + Call allowed and Call cancelled     - Status code 201     - error message - " Invalid json payload" |
| Test result |  |

|  |  |
| --- | --- |
| Test 9 | Call: Passenger-group Call with group size = 3 - > source: any floor, Destination: any floor  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Test 10 | Call: Passenger-group Call with group size = 10 [Invalid size as defined in the elevator] - > source: any floor, Destination: any floor  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Option 1   + Illegal call prevented by user interface * Option 2   + Call allowed and Call cancelled     - Status code 201     - error message - "INVALID\_PASSENGER\_COUNT " |
| Test result |  |

|  |  |
| --- | --- |
| Test 11 | Call: Transfer floor call - > Source: any floor, Destination: any floor  Note: The source and destination floors cannot be served by the same elevator.  Car Call – Destination only |
| Expected result | * Call accepted and elevator moving   + Status code 201   + Session id returned     - modified destination included     - modified reason included * Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Test 12 | Call: Through lift call - > Source: any floor, Destination: any floor  Note: Both source and destination floors are on the same floor but opposite side of the elevator. |
| Expected result | * Option 1   + Illegal call prevented by user interface * Option 2   + Call allowed and Call cancelled     - Status code 201     - cancel Reason "SAME\_SOURCE\_AND\_DEST\_FLOOR” |
| Test result |  |

|  |  |
| --- | --- |
| Test 13 | Call: No travel call - > Source: any floor, Destination: same as source floor  Note: Both source and destination floors are on the same floor and same side of the elevator. |
| Expected result | * Option 1   + Illegal call prevented by user interface * Option 2   + Call allowed and Call cancelled     - Status code 201     - cancel Reason "SAME\_SOURCE\_AND\_DEST\_FLOOR” |
| Test result |  |

|  |  |
| --- | --- |
| Test 14 | Call: Specific lift Call- > Source: any floor, Destination: any floor  Note: Allowed Lift “allowed­lifts” id to be included in the send request. Landing Call – Source only, Car Call – Destination only |
| Expected result | * Call accepted and elevator starts moving   + Status code 201   + Session id returned * Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Test 15 | Call: Cancel Call- > Source: any floor, Destination: any floor  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Request Elevator to move to any floor   + Status code 201   + Session id returned * Elevator tracking as needed * Send request cancel with payload including Session id   + Status code 201   + Elevator stop moving |
| Test result |  |

|  |  |
| --- | --- |
| Test 16 | Call: Null call - > Source: any floor, Destination: any floor  Note: Destination floor is invalid and not part of building config. Car Call – Destination only |
| Expected result | * Option 1   + Illegal call prevented by user interface * Option 2   + Call allowed and Call cancelled     - Status code 201     - error message - "Ignoring call, unable to resolve destination: area:\*\*\*\*” |
| Test result |  |

|  |  |
| --- | --- |
| Test 17 | Call: Null call - > Source: any floor, Destination: -  Note: Destination floor is not defined. Car Call – Destination only |
| Expected result | * Option 1   + Illegal call prevented by user interface * Option 2   + Call allowed and Call cancelled     - Status code 201     - error message - "Ignoring call, destination not defined” |
| Test result |  |

|  |  |
| --- | --- |
| Test 18 | Call: Null call - > Source: any floor, Destination: any floor  Note: Source floor is invalid and not part of building config. Landing Call – Source only |
| Expected result | * Option 1   + Illegal call prevented by user interface * Option 2   + Call allowed and Call cancelled     - Status Code 201     - error message - "Ignoring call, unable to resolve area: area:\*\*\*\*” |
| Test result |  |

|  |  |
| --- | --- |
| Test 19 | Call: Null call - > Source: any floor, Destination: any floor  Note: Source floor and Destination floor are both invalid and not part of building config. |
| Expected result | * Option 1   + Illegal call prevented by user interface * Option 2   + Call allowed and Call cancelled     - Status Code 201     - error message - "Ignoring call, unable to resolve area: area:\*\*\*\*" |
| Test result |  |

|  |  |
| --- | --- |
| Test 20 | Call: Concierge Call with call station terminal id as configured and in used at selected floors - > source: any floor, Destination: any floor  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Test 21 | Call: Concierge Call with call station terminal id as configured but not in use at selected floors - > source: any floor, Destination: any floor  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Option 1   + Illegal call prevented by user interface * Option 2   + Call allowed and Call cancelled     - Status Code 201     - error message - "INVALID\_SIDE" for Destination call     - error message - "FLOOR\_DOES\_NOT\_EXIT " for landing call |
| Test result |  |

|  |  |
| --- | --- |
| Test 22 | Call: Concierge Call with call station terminal id not configured and not in use at selected floors - > source: any floor, Destination: any floor  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Option 1   + Illegal call prevented by user interface * Option 2   + Call allowed and Call cancelled     - Status Code 201     - error message - "INVALID\_TERMINAL\_ID " |
| Test result |  |

|  |  |
| --- | --- |
| Test 23 | Call: Misplaced call to Building ID: a4KrX2cei - > Source: any floor, Destination: any floor  Note: Building ID is invalid and not part of used resources. Landing Call – Source only, Car Call – Destination only |
| Expected result | * Option 1   + Illegal call prevented by user interface * Option 2   + Call allowed and Call cancelled     - Status code 404     - error message - "Building data not found for ID building:a4KrX2cei” |
| Test result |  |

## Multiple groups and call giving

|  |  |
| --- | --- |
| Functionality declaration 1 | Specify how *multiple groups* (at least two building ids) or (one building id with multiple suffix :1, :2, …) in a building (physical building) are selected for placing calls. |
| Comment |  |

|  |  |
| --- | --- |
| Test 24 | Group 2 (second building id) of physical building’s lobby 2 access is provided.  lobby 2 call - > Source: any floor, Destination: any floor Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Possible to select between groups (group 1 or group 2) * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Test 25 | Group 2 (suffix :2) of physical building’s lobby 2 access is provided.  lobby 2 call - > Source: any floor, Destination: any floor Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Possible to select between groups (group 1 or group 2) * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed |
| Test result |  |

## Integration with Access Control and call giving

|  |  |
| --- | --- |
| Functionality declaration 2 | Specify how user’s access permission to *specific floor(s)* is obtained from access control system for calls by solution. |
| Comment |  |

|  |  |
| --- | --- |
| Functionality declaration 3 | Specify how user’s *home floor is set* to an access control system for direct calls by the access control system. |
| Comment |  |

|  |  |
| --- | --- |
| Functionality declaration 4 | Specify how user’s *home floor is obtained* from access control system for direct call by solution (typically automatic calls). |
| Comment |  |

|  |  |
| --- | --- |
| Test 26 | Call: Access control call - > Source: any floor, Destination: any floor  Note: floors are as defined in the access control permissions. Landing Call – Source only, Car Call – Destination only |
| Expected result | * Users have access only to the floors specified in the access rights * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Test 27 | Call: Access control call with media id - > Source: any floor, Destination: any floor  Note: floors are already defined in the access control system linked with the media id (with and without company code). Landing Call – Source only, Car Call – Destination only |
| Expected result | * Optional Users have access only to the floors specified in the access rights * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Test 28 | Call: Access Control Home floor call - > Source: any floor, Destination: any floor  Note: the destination must be the user home floor retrieved from access system. Landing Call – Source only, Car Call – Destination only |
| Expected result | * Users have access only to the floors specified in the access rights and home floor highlighted * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Test 29 | Call: Access Control Home floor call with media id - > Source: any floor, Destination: any floor  Note: the home floor is already defined in access control system linked with the media id. Landing Call – Source only, Car Call – Destination only |
| Expected result | * Optional Users have access only to the floors specified in the access rights and home floor highlighted * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed |
| Test result |  |

## Location control and call giving

|  |  |
| --- | --- |
| Functionality declaration 5 | Specify how a user is *geographically placed* in the building and preventing calls from long distance away from the building. (e.g., beacon, geolocation…) |
| Comment |  |

|  |  |
| --- | --- |
| Test 30 | Call: Geographically controlled call - > Source: any floor, Destination: any floor  Note: users are only allowed to place a call within the building they are located. Landing Call – Source only, Car Call – Destination only |
| Expected result | * While out of range, solution disables all calls   + Calls cannot be made * While in range, solution enable all calls   + Call accepted and elevator moving     - Status code 201     - Session id returned   + Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Functionality declaration 6 | Specify how solution controls *barriers* (e.g., turnstiles, speed gate…).  In situations where there is no separate system (e.g., by access control system), specify how will barrier be controlled. |
| Comment |  |

|  |  |
| --- | --- |
| Functionality declaration 7 | Specify how a user is *geographically placed next to a barrier* in the building and how it is preventing calls from being made before barrier is crossed. (e.g., beacon, geolocation…) |
| Comment |  |

|  |  |
| --- | --- |
| Functionality declaration 8 | Specify how user *walking direction is obtained* while heading towards or away from the elevator lobby (typically for automatic calls). |
| Comment |  |

|  |  |
| --- | --- |
| Test 31 | Call: Barrier call - > Source: any floor, Destination: any floor  Note: user is only allowed to place a call after crossing the barrier. Landing Call – Source only, Car Call – Destination only |
| Expected result | * Before barrier, solution disables all calls   + Calls cannot be made * After barrier, solution enables all calls   + Call accepted and elevator moving     - Status code 201     - Session id returned   + Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Test 32 | Call: Barrier control and call - > Source: any floor, Destination: any floor  Note: user is only allowed to place a call after crossing the barrier. Landing Call – Source only, Car Call – Destination only |
| Expected result | * Before barrier, solution disables all calls   + Calls cannot be made * At barrier, solution releases barrier for passage * After barrier, solution enables all calls   + Call accepted and elevator moving     - Status code 201     - Session id returned   + Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Functionality declaration 9 | Specify control method for *avoiding multiple calls* when in range and heading in right direction. And while in elevator lobby (while waiting for allocated elevator) |
| Comment |  |

|  |  |
| --- | --- |
| Test 33 | Call: Multiple automatic calls prevention - > Source: any floor, Destination: any floor  Note: user should only place single call for a journey. Landing Call – Source only, Car Call – Destination only |
| Expected result | * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed * No other calls generated while elevator approaches |
| Test result |  |

|  |  |
| --- | --- |
| Test 34 | Call: Multiple automatic call prevention for Group (Lobby) 2 - > Source: any floor, Destination: any floor  Note: user should only place single call for a journey to the correct building id. Landing Call – Source only, Car Call – Destination only |
| Expected result | * Possible to automatically select between groups (building id 1 or building id 2) * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed * No other calls generated while elevator approaches |
| Test result |  |

|  |  |
| --- | --- |
| Test 35 | Call: Multiple automatic call prevention for Group (Lobby) 2 - > Source: any floor, Destination: any floor  Note: user should only place single call for a journey to the correct group suffix. Landing Call – Source only, Car Call – Destination only |
| Expected result | * Possible to automatically select between groups (group suffix 1 or group suffix 2) * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed * No other calls generated while elevator approaches |
| Test result |  |

## Elevator locks and call giving.

This test is to be done with test assistance. Contact KONE API Support (api-support@kone.com) to book a test assistant

|  |  |
| --- | --- |
| Test 36 | Call: Enable locks - > Source: any floor, Destination: any floor  Note: in this use case source floor is locked by ACS solution. Landing Call – Source only, Car Call – Destination only |
| Expected result | * Call accepted and cancelled   + Status code 201   + cancel Reason - "FLOOR\_IS\_LOCKED" |
| Test result |  |

|  |  |
| --- | --- |
| Test 37 | Call: Disable locks - > Source: any floor, Destination: any floor  Note: in this use case source floor is unlocked by ACS solution. Landing Call – Source only, Car Call – Destination only |
| Expected result | * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed |
| Test result |  |

## Device disabling and call giving

This test is to be done with test assistance. Contact KONE API Support (api-support@kone.com) to book a test assistant

|  |  |
| --- | --- |
| Test 38 | Call: Elevator’s allocation interrupted (all elevators disabled) - > Source: any floor, Destination: any floor  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Call accepted and cancelled   + Status code 201   + cancel Reason - "NO\_LIFT\_AVAILABLE "   + Indicate call failure to user (such as timeout) |
| Test result |  |

|  |  |
| --- | --- |
| Test 39 | Call: Elevator’s allocation interrupted (all elevators enabled) - > Source: any floor, Destination: any floor  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Test 40 | Call: End-to-end communication interrupted (DTU disconnected) - > Source: any floor, Destination: any floor  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Call stuck on created   + Status code 201   + error: 1005 * Indicate call failure to user (such as timeout) |
| Test result |  |

|  |  |
| --- | --- |
| Test 41 | Call: Call failure, communication interrupted - > Ping building or group  Note: Start a ping sequence and stop pinging after positive response is obtained |
| Expected result | * Ping failed * Communication restored   + Ping Successful |
| Test result |  |

|  |  |
| --- | --- |
| Test 42 | Call: End-to-end communication enabled (DTU connected) - > Source: any floor, Destination: any floor  Note: Landing Call – Source only, Car Call – Destination only |
| Expected result | * Call accepted and elevator moving   + Status code 201   + Session id returned * Elevator tracking as needed |
| Test result |  |

|  |  |
| --- | --- |
| Test 43 | Custom case |
| Expected result |  |
| Test result |  |

## Other system functionality checks

|  |  |
| --- | --- |
| Functionality declaration 10 | Specify how *logs* for access permission and call giving are handled. |
| Comment |  |

|  |  |
| --- | --- |
| Functionality declaration 11 | specify used *power saving* technique / battery management. |
| Comment |  |

|  |  |
| --- | --- |
| Functionality declaration 12 | Self-assessment *cyber security* form filled |
| Comment |  |

**Legend:**

|  |  |
| --- | --- |
|  | ok / Passed |
|  | pending implementation |
|  | not tested / not passed |

# Solution under test details

## Solution description: -

## use case: -

## Sequence diagram: -

# Appendix

## Grading (KONE use only)

This gives some insight into solution functionalities readiness

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Grade | | | | | |
| Functionality | 5 | 4 | 3 | 2 | 1 | 0 |
| Log | x | x | x | x | x |  |
| Power saving | x | x | x | x | x |  |
| Barrier control | (x) | (x) | (x) | (x) |  |  |
| Direction detection (for automatic call) | x\* | x\* | x\* | x\* |  |  |
| Multiple group support | x | x | x |  |  |  |
| Cyber security | x | x | x |  |  |  |
| Geolocation | x | x |  |  |  |  |
| Barrier side location | x | x |  |  |  |  |
| Direct call destination (home floor) | x |  |  |  |  |  |
| Access Control Integration | x |  |  |  |  |  |

(x) – optional

x\* – if applicable

## Attribute use case

This is to explain possible scenarios covered by each test case and functional declaration.

|  |  |  |
| --- | --- | --- |
| Functional Declaration | Test Case | Attributed use case |
|  | 1 | Basic connection setup needed for all use cases. |
|  | 2 | General use case for solution user to be able to call the elevator from one floor to another. |
|  | 3 | This use case checks that a solution user can always make a call to exit the building. For example, if solution is having error or user is on floor for which they have no access right, the user should always be able to make a call to exit floor. |
|  | 4 | This checks that solution can handle errors generated by using action id that is not supported by the elevator. There is a list of actions returned in the action command but if other outside this list is used, users should be instructed to use the correct value |
|  | 5 | This is to handle situations that previously accepted action is now disabled, and users need to be informed properly to switch their action selection. |
|  | 6 | There comes with the action file description of actions, if used incorrectly, users should be informed and directed. For example if making a landing call at the last floor and selecting an action indication going down, as this is not physically possible, such error will occur. |
|  | 7 | To get maximum door open time so that solution user can enter lift, use of delay is important. For example, normal elevator door is opened for 5 seconds but solution user needs more time to enter the elevator, with delay data, solution user can get more time to enter the elevator. |
|  | 8 | The delay is maximum 30 sec, for example if solution user wants to set 25 second and then set 40sec for the delay, this will cause call to be rejected. |
|  | 9 | Each elevator has a fixed physically size for number of people and the size reduces when it is getting occupied, so if a group call is made with the appropriate amount of group size to match with the vacant space inside the elevator, the call will be accepted. |
|  | 10 | Each elevator has a fixed physically size for number of people and the size reduces when it is getting occupied, so if a group call is made and it is larger than the free space within the elevator, this error will occur. |
|  | 11 | This is for building setup where two elevator rides are needed to get to the destination. For example, if solution user is on floor 5 and wants to go to floor 15, in the building elevator A can serve from floor 1 to 10 and elevator B can serve from floor 10 to 20 (in 20 floors building), and the solution user makes a call with source 5 and destination 15. First elevator A will come to floor 5 and take the solution user to floor 10. In this case, the solution user needs to know that it is at floor 10 and not 15 and that it needs to make another call with source 10 and destination 15 to use elevator B to get to its final destination. Else solution user will be on floor 10 with to understanding what to do next. |
|  | 12 | For buildings with elevators that have two doors (front and rear), if a call is made from front side to rear side of the same floor for example floor 5 front and floor 5 rear for both front and rear door to open and solution user can walk through the elevator, this is not allowed and will result in call rejection. |
|  | 13 | If the solution user makes a call to the same floor where it is located or for example it is on floor 5 and wants to go to floor 10 but set that it is on floor 10 and want to go to floor 10, this will result in call rejection. |
|  | 14 | In a situation that there is more than one elevator in the elevator lobby, it is possible to specify which of the elevator to serve the call being made. This use case provides the chance to selector among the elevator with the correct parameter. |
|  | 15 | This helps to cancel a call made that is no longer needed |
|  | 16 | For a building with 20 floors, if the destination is set to 21 or above, for example solution user is on floor 5 and want to go to floor 11 but set destination to floor 21 instead, this will result in error and solution user needs to know of the error and make correct call. |
|  | 17 | For a building with 20 floors, if the source is set to 21 or above, for example solution user is on floor 5 and set that it is on floor 25, this will result in error and solution user needs to know of the error and make correct call. |
|  | 18 | For a building with 20 floors, if the source is set to 21 or above, for example solution user is on floor 5 and want to go to floor 11 but set source to floor 21 instead, this will result in error and solution user needs to know of the error and make correct call. |
|  | 19 | For a building with 20 floors, if the source is set to 21 and destination is set to 25 or above, for example solution user is on floor 5 and want to go to floor 11 but set the source to 21 and destination to floor 25 instead, this will result in error and solution user needs to know of the error and make correct call. |
|  | 20 | This checks for calls that are meant to display their allocated elevator at a terminal in the elevator lobby. The terminal is valid for the used terminal id and area and call accepted. |
|  | 21 | This checks for calls that are meant to display their allocated elevator at a terminal in the elevator lobby. The terminal is invalid for the used terminal id and area and call is rejected and generates error. |
|  | 22 | This checks for calls that are meant to display their allocated elevator at a terminal in the elevator lobby. The terminal is invalid for the used terminal id and area and call is rejected and generates error. |
|  | 23 | When there is mistake in building id where the solution user is located for example if building id is abcdefg and solution user makes a call to building cdefgab then call will be rejected. |
| 1  Explain how it is done. |  | In a physical building, there can be multiple groups for example in a building lobby to the left can be elevator West group and to the right elevator East group, when the solution user is in the lobby and walking towards the West group elevator, it has to know about both groups and about the current group it is located so as to make call to the West group and not to the East group. |
|  | 24 | Like above, this is to check making call to second group, for example while at the lobby and walking towards the East group elevator, solution user should not make call to West group elevator. |
|  | 25 | For group id with the same building name but group number extension, Like above, this is to check making call to second group, for example while at the lobby and walking towards the East group elevator, solution user should not make call to West group elevator. |
| 2  Explain how it is done. |  | This applies when building have access control system. For example, if access control system in a building specifies where the solution user can go and it specifies that the solution user can only got to floors 5 – 10. How will the solution user know about this limited access? The solution should connect to access control system and get this specific floor so that it knows that it can only go to floors 5 – 10. |
| 3  Explain how it is done. |  | This applies when building have access control system. For example, if access control system in a building specifies where the solution user default home floor is located and user want to change this with their solution, like floors 5 when it was previously floor 10. How will the solution user preferred new home floor be transferred to the access control system? most likely using the access control system own protocol. |
| 4  Explain how it is done. |  | This applies when building have access control system. For example, if access control system in a building specifies where the solution user default home floor is located how can this home floor be transferred from the access control system to the user solution? most likely using the access control system own protocol. |
|  | 26 | Like above, solution connects to access control system and now knows it can only make call to floors 5 – 10. Calls to other floors by the solution user must not be allowed. As the API doesn’t prevent solution user from making calls to other floors, the restriction must be done within the solution user to follow the access control rules in the building. |
|  | 27 | Similar to description above but in this case testing is made by including the media id into the call giving payload. |
|  | 28 | Get from the access control system, user can see their home floor highlighted in their solution, for example floor 5 and able to call it easily. |
|  | 29 | Get from the access control system, user can see their home floor highlighted in their solution, for example floor 5 and able to call it easily. this homefloor is accessed through the provision of a media id |
| 5  Explain how it is done. |  | This checks if solution user is in the right building, for example if the solution user is configured to work in Building 1 in a building complex and then moved to Building 2 to start operation, the solution user must not be allowed to make calls to Building 1 and must identify itself to be in Building 2. |
|  | 30 | Like above this checks for example when solution user is in Building 1 calls can’t be made and when the solution user is moved to Building 2 it is then able to make calls. |
| 6  Explain how it is done. |  | This handles for example when there is a turnstile in the building but no means to open and close the turnstile gate. If solution user has system to open and close the gate when it goes through, then specify it here. Else customer needs to find another system to control the gate. |
| 7  Explain how it is done. |  | If there is a building turnstile regardless how it is controlled, how can solution user for example when before the turnstile is prevented from making any call and when after the turnstile its calling ability is enabled. If solution user is going to floor 5, while before the turnstile and tries to make a call, the call making is disabled and after going pasted the turnstile the call making is enabled and it can call floor 5. |
| 8  Explain how it is done. |  | If solution user makes a call at regular interval, for example when entering or exiting an elevator lobby, how to determine based on solution user walking direction that call should be made and if solution user is leaving the elevator lobby, calling is prevented. If solution user is going from floor 5 to floor 10, when walking in the direction to lobby of floor 5, call can be made but when walking away from lobby on floor 10 then call must be disabled. (Typically for automatic calls) |
|  | 31 | Like above, this checks for example if calls are prevented before a turnstile while the solution user is walking toward the elevator lobby and once the solution user crosses the turnstile, elevator calling becomes active. It can be assumed that some other system like access control system will open the turnstile for the solution user, so before the turnstile is opened and when solution user is on floor 5 going to floor 10, call can’t be made but after access control opens the turnstile and solution user crosses, then call to floor 5 is possible. |
|  | 32 | Like above, this checks for example if calls are prevented before a turnstile while the solution user is walking toward the elevator lobby, the solution user can open the turnstile and once the solution user crosses the turnstile, elevator calling becomes active. In this case, it can be assumed that solution user / solution user system will open the turnstile for the solution user, so before the turnstile is opened and when solution user is on floor 5 going to floor 10, call can’t be made but after solution user / solution user system opens the turnstile and solution user crosses, then call to floor 5 is possible. |
| 9  Explain how it is done. |  | This handles unwanted calls for example a call is already made, and solution user is wating for the elevator in the lobby, while waiting, other calls should not be made. Meaning if solution user is going from floor 5 to 10, and first call is made, while solution user is waiting for elevator to come to floor 5, it should not make any more calls for floor 5 to 10. |
|  | 33 | Like above, this checks for example that calls are not made from floor 5 to floor 10 again while solution user is still waiting for elevator A to come to floor 5. |
|  | 34 | This test is similar to above but made with the second elevator group |
|  | 35 | Like above, this checks for example that calls are not made from floor 5 to floor 10 again after solution user / solution user system opens the turnstile for passage while solution user is still waiting for elevator A to come to floor 5 |
|  | 36 | This checks for local lock error handling. for example, if there is local lock on floor 5 and solution user make a call setting it source to 5, it will reject the call. Solution user should be able to handle the rejection. |
|  | 37 | reset injected error above and test again that all is fine. |
|  | 38 | This checks how un-servable call is handled for example if calls are made from floor 5 to floor 10 but the call response is that no elevator can serve therefore call cancelled, how to handle such cancellation and make another call. |
|  | 39 | reset injected error above and test again that all is fine |
|  | 40 | This checks how un-servable call is handled for example if calls are made from floor 5 to floor 10 but the call status never changes, how to handle such freeze in communication and inform the user of the state. Like a timeout. |
|  | 41 | When a call is placed and the call fails, it is possible to ping the elevator to determine if the communication is alive before proceeding to making more calls. This pinging can stop once successful and call making resumes. |
|  | 42 | reset injected error above and test again that all is fine. |
| 10 |  | Giving explanation how logs especially access call logs to different floors are stored. |
| 11 |  | For mobile applications, it is important to preserve battery time, give explanation how this is accomplished. |
| 12 |  | This is to indicate if the cyber security self-test has been taken. |