Inter-App Communication

May 11th, 2017 | Status Update

Suhyung Lee

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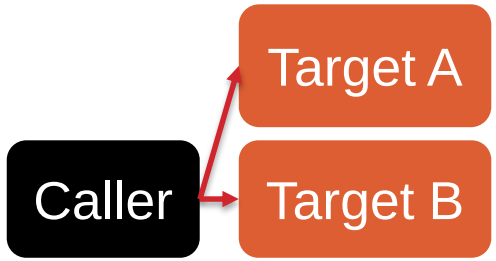
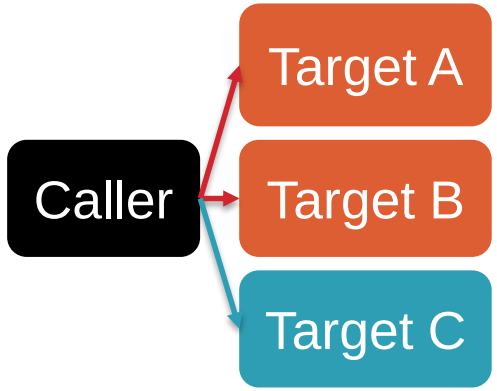
Motivation

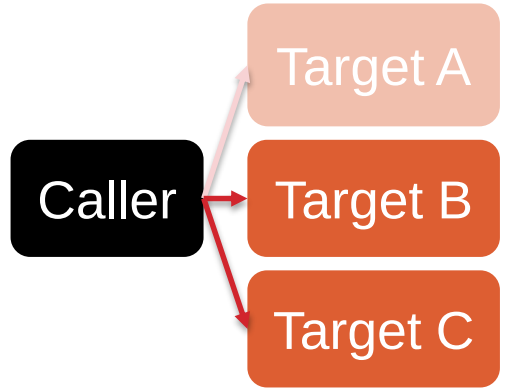
- A better way to manage communication between apps than IPC



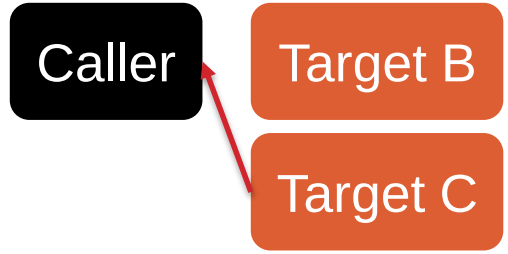
More than one app provide the same functionality



App is installed/updated
App is not running



App is removed



App communicates to originator

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Why Inter-App Communication?

- Requesting an action without specifying a target app
  - No dependency between apps
  - Multiple apps can be registered for the action as candidates.
  - An user can select one of candidates
- Requesting an action regardless of status of a target app
  - A target app can receive a request in any status (not running/running in the background/running in the foreground)
- Responding a result from the target app to the app which requests

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Scope

- Defining use cases and requirements
- Selecting a target app among candidates
- Handling target app(s) when managed app(s) are installed/updated/removed
- Delivering a message regardless of status (e.g. not running, running in the background)
- Delivering a response from the target app to the caller

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Progress

- Promoted to PC, P2 for Nostromo (Compliance 12.0)
- Defined use cases and requirements
- Discussed with Application Framework
- Proof of concept with a simple use case

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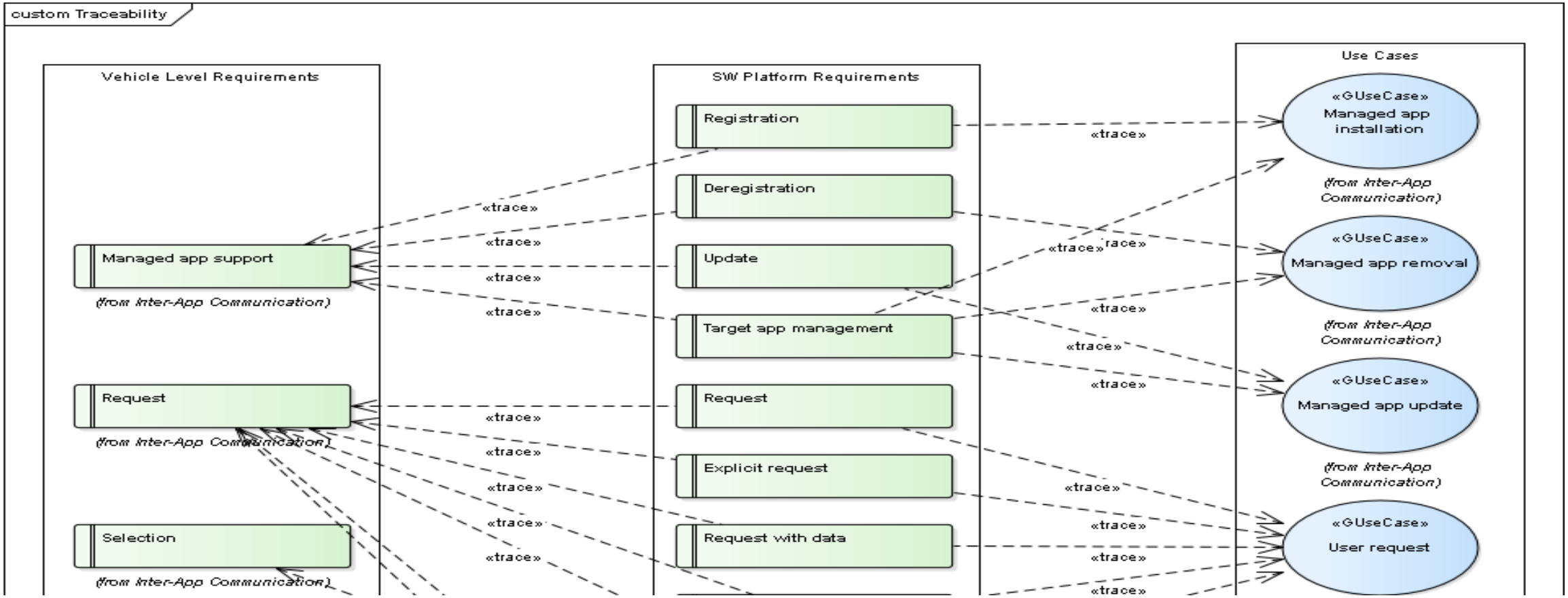
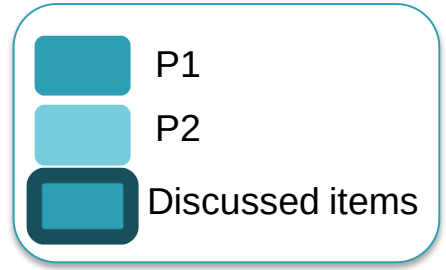
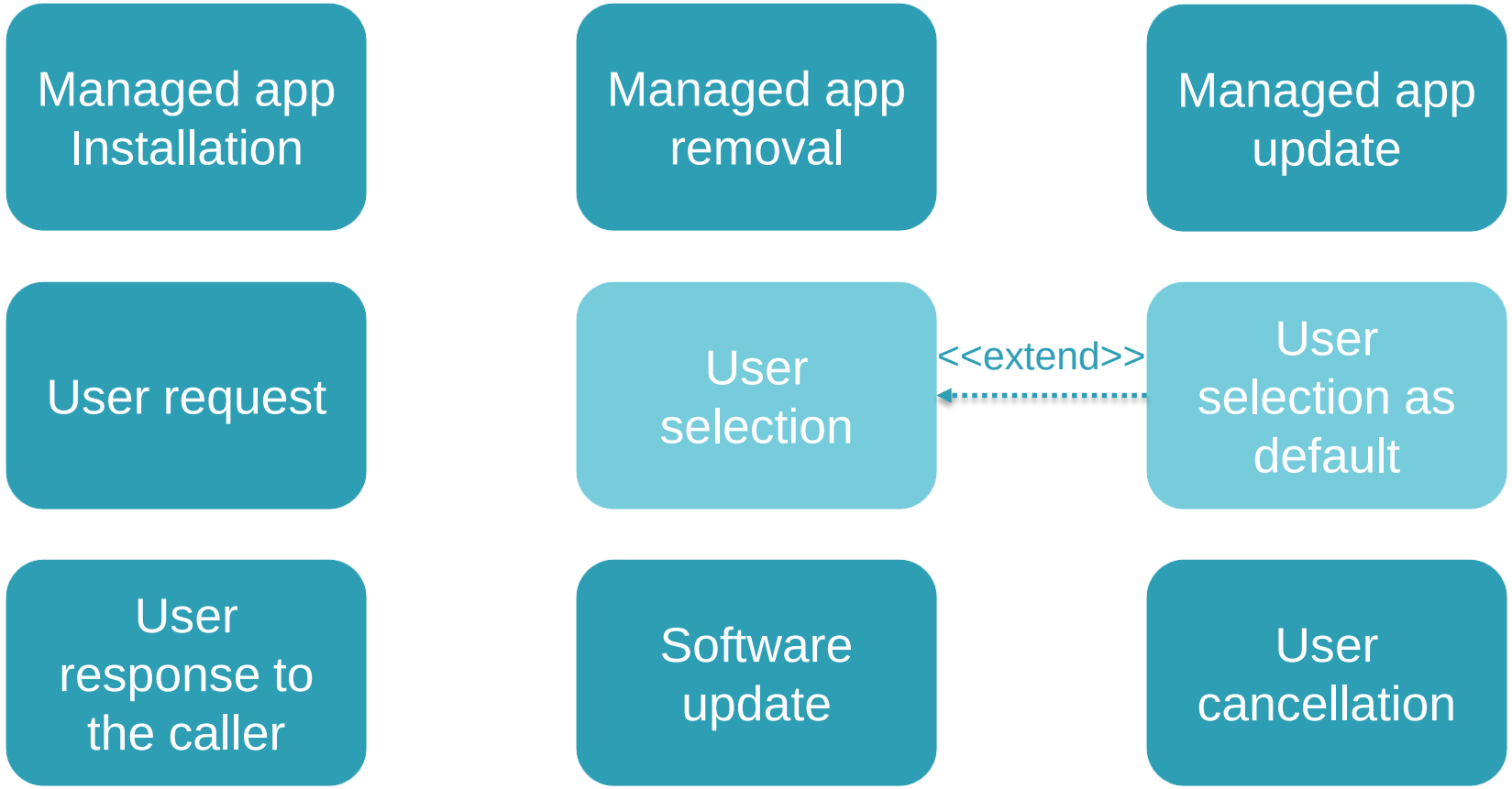
UML Model


custom Traceability
Vehicle Level Requirements
Managed app support
(from Inter-App Communication)
Request
(from Inter-App Communication)
Selection
(from Inter-App Communication)
SW Platform Requirements
Registration
Deregistration
Update
Target app management
Request
Explicit request
Request with data
Use Cases
«GUseCase»
Managed app installation
(from Inter-App Communication)
«GUseCase»
Managed app removal
(from Inter-App Communication)
«GUseCase»
Managed app update
(from Inter-App Communication)
«GUseCase»
User request
«trace»

Use cases





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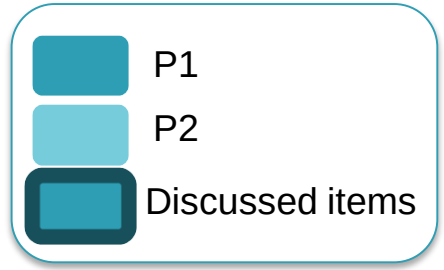
Vehicle Level Requirements



Managed app support

Request

Selection

Default target app assignment

Response to the caller

Default target app management

Cancellation

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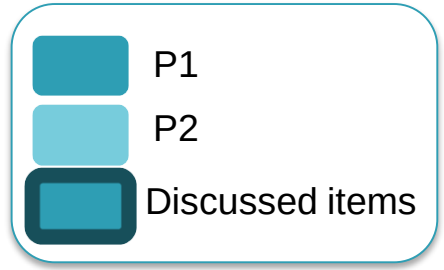
SW Platform Requirements(1/2)



Registration

Deregistration

Update

Target app management

Request

Explicit request

Request with data

Data type

MIME type support

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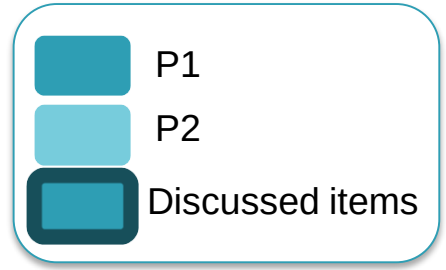
SW Platform Requirements(2/2)



Selection

Default target app assignment

Delivery

Delivery with launch

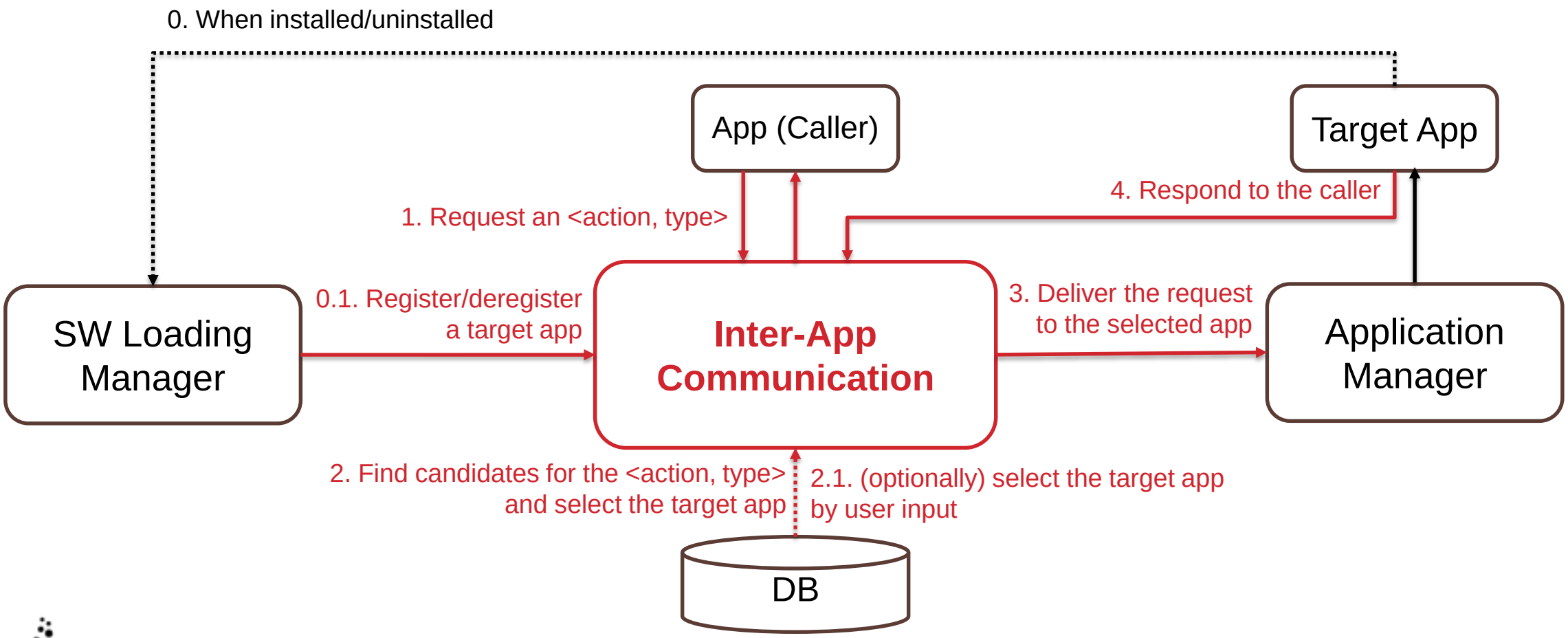
Response to the caller

Response to the caller with data

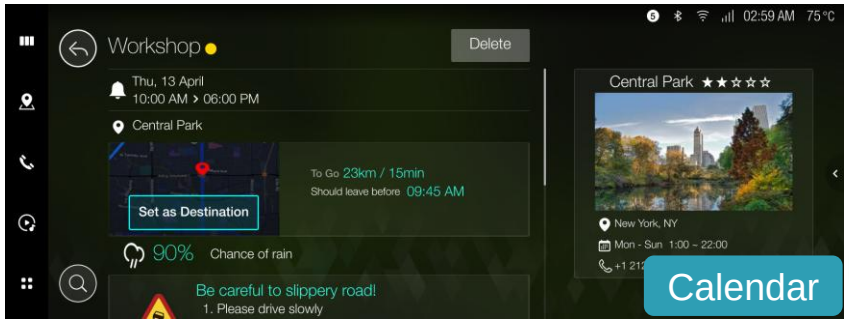
Default target app management

Cancellation

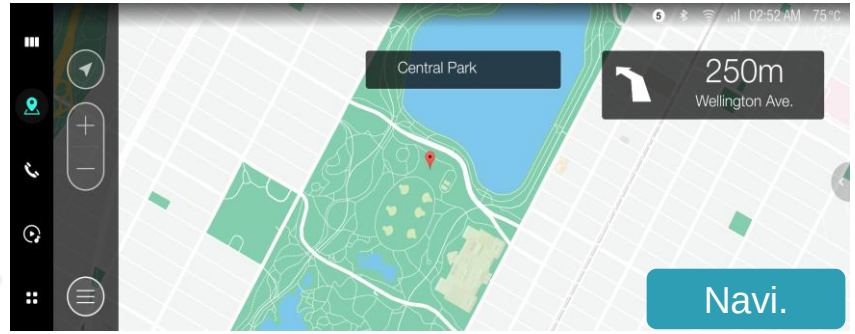
Overall Architecture

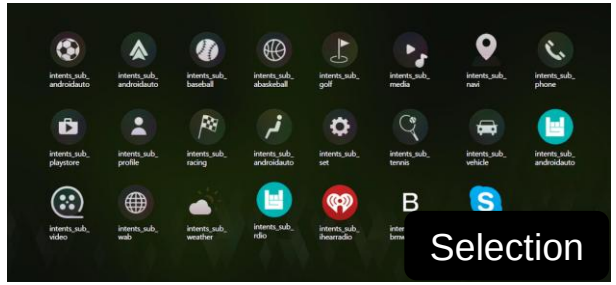


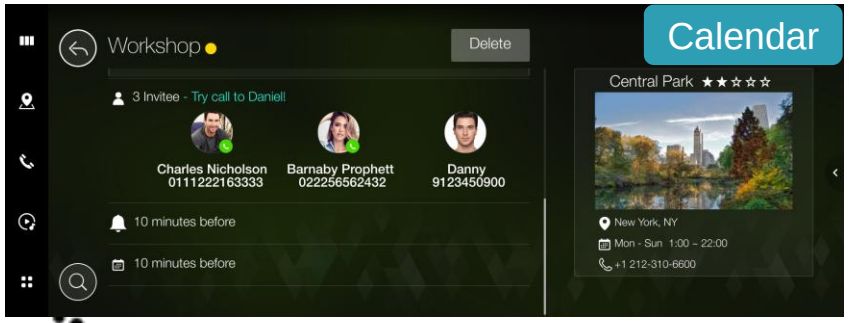
PoC: Showcase Demo



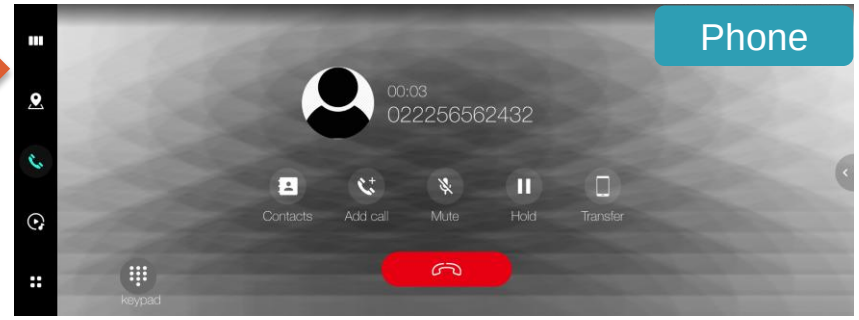
Coordinates







Contact



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Plan

- Aligning with Application Framework
- Developing more use cases and requirements
- Also investigating existing concepts or projects
- Defining interfaces in Franca IDL
- Promoting to
  - AC for Plusar (April. 2018)

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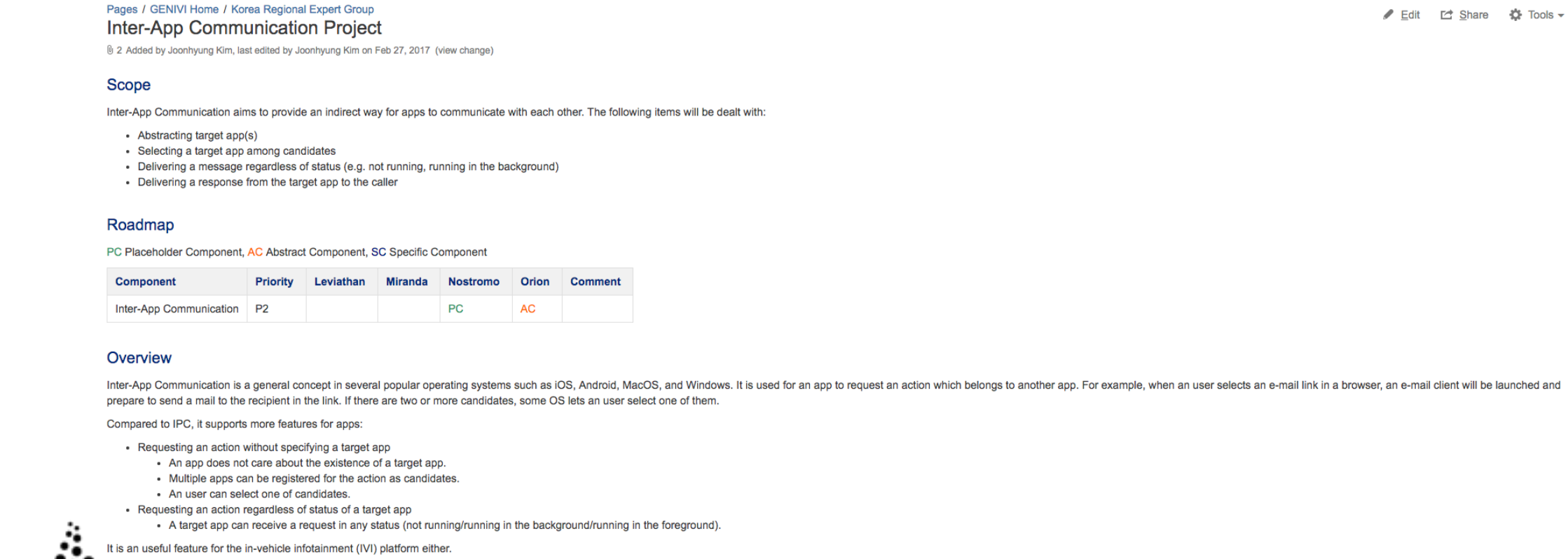
Project wiki

- https://collab.genivi.org/wiki/display/genivi/Inter-App+Communication+Project



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Edit Share Tools

Inter-App Communication Project

2 Added by Joonhyung Kim, last edited by Joonhyung Kim on Feb 27, 2017 (view change)

Scope

Inter-App Communication aims to provide an indirect way for apps to communicate with each other. The following items will be dealt with:

- Abstracting target app(s)
- Selecting a target app among candidates
- Delivering a message regardless of status (e.g. not running, running in the background)
- Delivering a response from the target app to the caller

Roadmap

PC Placeholder Component, AC Abstract Component, SC Specific Component

Component	Priority	Leviathan	Miranda	Nostromo	Orion	Comment
Inter-App Communication	P2			PC	AC	

Overview

Inter-App Communication is a general concept in several popular operating systems such as iOS, Android, MacOS, and Windows. It is used for an app to request an action which belongs to another app. For example, when an user selects an e-mail link in a browser, an e-mail client will be launched and prepare to send a mail to the recipient in the link. If there are two or more candidates, some OS lets an user select one of them.

Compared to IPC, it supports more features for apps:

- Requesting an action without specifying a target app
  - An app does not care about the existence of a target app.
  - Multiple apps can be registered for the action as candidates.
  - An user can select one of candidates.
- Requesting an action regardless of status of a target app
  - A target app can receive a request in any status (not running/running in the background/running in the foreground).

It is an useful feature for the in-vehicle infotainment (IVI) platform either.

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