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## Deliverable D3.2

### Web-based VICINITY Neighbourhood Manager

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### <sup>1</sup> Deliverable Type:

R: Document, report (excluding the periodic and final reports)  
DEM: Demonstrator, pilot, prototype, plan designs  
DEC: Websites, patents filing, press & media actions, videos, etc.  
OTHER: Software, technical diagram, etc.

### <sup>2</sup> Dissemination level:

PU: Public, fully open, e.g. web  
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## Revision Control

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## Executive Summary

The present document is the deliverable D3.2 “Web-based VICINITY Neighbourhood Manager” of the VICINITY [1] project. The deliverable is a part of the WP3 VICINITY server implementation. Its implementation has been finished in time to achieve Milestone 4.

Regarding the architecture of VICINITY [3], the Neighbourhood Manager is a component of the VICINITY cloud (Figure 1). It is a web-based user interface that provides the means to explore a universe of registered devices and integrated service to VICINITY Platform. It enables devices owners (IoT operators) to control access of value-added services to his/her registered devices. Device owners are provided to VICINITY Communication Server which controls P2P network of VICINITY Nodes (integrated IoT infrastructures and value-added services).

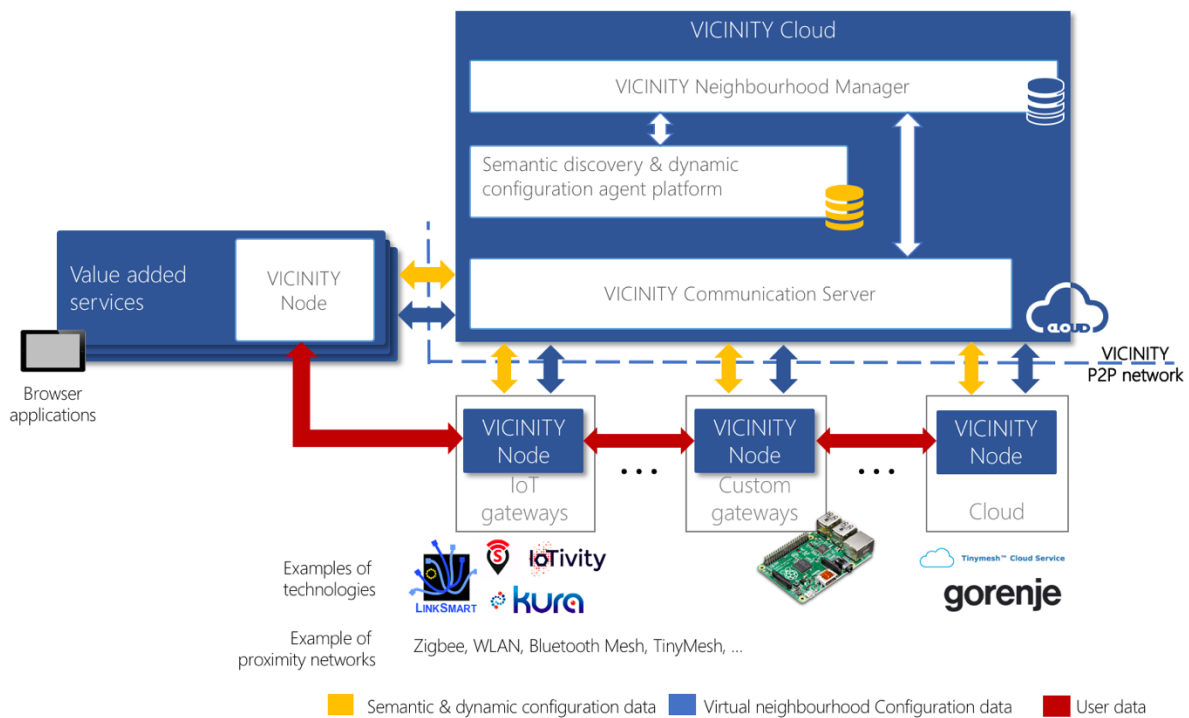


Figure 1 VICINITY Over-all architecture

Thus, the Neighbourhood Manager provides the following principal functionality as required by D1.5 Technical requirements specification [2] to fulfil the VICINITY objective 3.2:

- Interoperability setup: Create partnerships with other users of VICINITY and establish the privacy rules for the components within my infrastructure.
- Device register and discovery: Register smart things of my infrastructure into VICINITY and explore the platform looking for what other users have to offer.
- Deploy value added service: Register a service and make it available to others in the platform.
- Connecting VICINITY: Connect an infrastructure to VICINITY.

The Neighbourhood Manager is publicly accessible on <http://vicinity.bavenir.eu>. Its source code with installation and configuration guide is available on Github under the URL <https://github.com/vicinityh2020/vicinity-neighbourhood-manager>.

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## List of Definitions & Abbreviations

Abbreviation	Definition
EC	European Commission
EU	European Union
IoT	Internet of Things
H2020	Horizon 2020
DG RTD	Directorate-General for Research & Innovation
GitHub	Software platform managing GIT repositories
GIT	Version control system for tracking changes of computer files
API	Application programming interface
P2P	Peer-to-Peer network
SSL	Transport layer security
Node JS	JavaScript environment



## 1. Introduction

This document includes the Release Note of D3.2, Web-based VICINITY Neighbourhood Manager.

### 1.1. Deliverable structure

Below are presented the sections this document is divided in:

- Section 2: Overview of VICINITY neighbourhood manager and summary of current and future features.
- Section 3: List of the tasks implemented in the release.
- Section 4: List of the bugs fixed in the release.
- Section 5: Modifications list of the source code.
- Section 6: Conclusions.
- References

### 1.2. General overview

VICINITY Neighbourhood Manager is a web-based application that gives VICINITY users an intuitive visual control over their connected infrastructures and let them explore what else has the platform to offer.

As in the regular social networks, it is possible to establish partnerships with other users and share things with them. The users can set privacy levels to themselves and the things they have registered in VICINITY. The privacy levels range from:

- Private – Visible only within the user organisation.
- Visible for friends – Visible also for organisations that were befriended.
- Public - Visible for the whole platform.

In order to understand how the platform works, it is necessary to describe which are the main entities that exist and how they relate:

- Organisation: It is a company or association that can own services and/or IoT infrastructures. In VICINITY, the partnerships are made between organisations, and these organisations can have several user underneath.
- Users: These are the VICINITY actors. Each of them plays a role or more within an organisation:
  - Infrastructure operator
  - Service provider
  - Device owner
  - System Integrator
  - Vicinity user
  - Organisation administrator
- Agents: It represents the node that communicates an IoT infrastructure with VICINITY. There can be more than one per organisation.
- Item: Can be a smart device or a service. They need to be registered under an agent and belong to some user with the proper role to own them.

Besides registering infrastructures, setting visibility and creating partnerships, VICINITY Neighbourhood Manager offers other features such as receive notifications, keep track of the activity with the audits and create contracts to share items with other organisations.

Some of the functionalities that the user interface offers can also be accessed through an API [5], therefore other developers can easily integrate their own value-added services or UIs in the VICINITY platform.

### 1.3. Context within VICINITY

This deliverable, D3.2 Web-based VICINITY Neighbourhood Manager, is a part of WP3 Server implementation work package (Figure 2). The D3.2 is mainly derived from D1.5 VICINITY technical requirements specification [2] and D1.6 VICINITY architecture design [3].

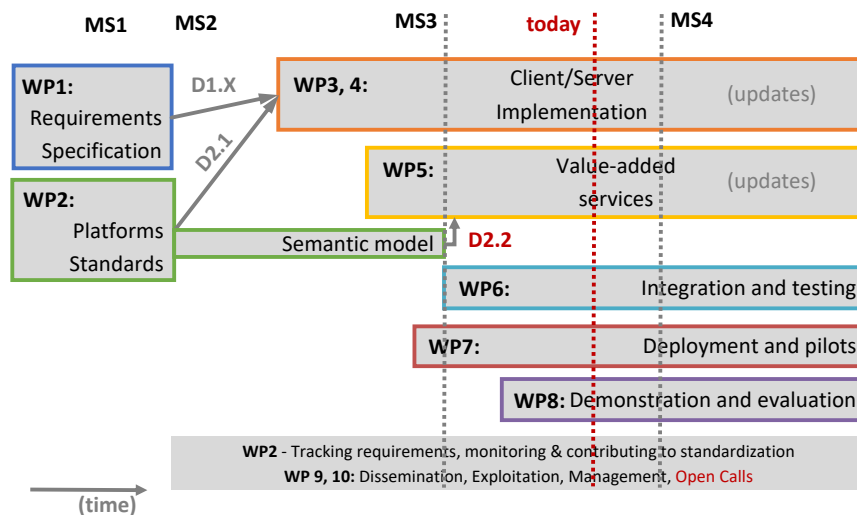


Figure 2 VICINITY work package structure

The VICINITY Neighbourhood Manager [D3.2 Web-based VICINITY Neighbourhood manager] is integrated with Open Interoperability Gateway API [D3.4 Open Interoperability Gateway API final version], VICINITY Communication server [D3.1 High-available VICINITY server deployment] and Semantic platform [D3.5 Semantic discovery and dynamic configuration services], thus this documentation assumes prior knowledge about these components as well.

## 2. Release note overview

This section presents the list of functionalities that the web is offering or will be offering in future stages.

### 2.1. Current features

Features currently available in VICINITY.

- Manage partnership with another organisation
  - Send partnership request
  - Accept or reject partnership request
  - Cancel partnership request
  - Remove partnership
- Device and service management and visualization
  - Register device and service
  - View device and service specification
  - Set up device and service privacy
  - Remove device and service
  - Visualize devices and service in my neighbourhood
- Share data and control of your items
  - Request service
  - Accept or reject sharing data or control
  - Cancel request
  - Stop sharing data or control
- Organisation management
  - Invite new users or organisations
  - Modify user or organisation information in the profile
  - Change user roles
  - Set up user privacy
  - Remove organisations or users
  - Search for other users and organisations in my neighbourhood
- Integrate IoT infrastructures in VICINITY
  - Register or modify agent
  - Remove agent
  - Register or update device (using agent)
  - Enable or disable device
- Integration with other cloud components
  - Integration with Communication Server
  - Integration with Semantic Repository
- Search and filtering
  - Regex search
  - Item filtering based on ontology types
- Security
  - Store hashed passwords
  - SSL communication
- Other
  - Forgot password
  - Remember me
  - Notifications
  - See audit logs (history)

## 2.2. Future features

The following extra features are planned to be added in VICINITY Neighbourhood Manager:

- Transfer registered devices and added-value services among users;
- Group devices and added-value services.

### 3. Implemented issues

This section contains the main tasks implemented.

**Table 1** List of issues

Summary	Status	Partner
Manage partnership with another organization	DONE	BVR
Request to access IoT Device	DONE	BVR
Request to access value added service	DONE	BVR
Device register and discovery	DONE	BVR
Organization and user management	DONE	BVR
Forgot password	DONE	BVR
Remember me	DONE	BVR
Search user profiles in VICINITY	DONE	BVR
Set-up visibility of user profile	DONE	BVR
User registration	DONE	BVR
Configuration of VICINITY Neighbourhood manager	DONE	BVR
Alarm reporting	DONE	BVR
Deployment of new version of VICINITY Neighbourhood Manager	DONE	BVR
Store logs for auditing - audit log	DONE	BVR
Search enhanced with ontology	DONE	BVR
Code refactor to adapt contracts concept	DONE	BVR
update organisation registration	DONE	BVR
Hash user passwords	DONE	BVR
Notification and audit update	DONE	BVR
Enable SSL communication in Node JS app	DONE	BVR
Store mail server config in environmental variables	DONE	BVR
Item registration services	DONE	BVR
API for value added services	DONE	BVR

## 4. Fixed bugs

This section contains the bugs corrected during debugging process.

Table 2 List of bugs

Summary	Status	Partner
Delete items that are not enabled	DONE	BVR
Item profile show wrong companies which can see	DONE	BVR
Safe storing of passwords and secrets	DONE	BVR
Remove Item link with users	DONE	BVR
Display disabled items	DONE	BVR
Organisation profile partners wrong display	DONE	BVR
Do not send communication server credentials from front end	DONE	BVR
Bug organisation profile item views	DONE	BVR
Make clickable whole box	DONE	BVR
When click on allDevices after searchTerm is filled it should show allDevices again	DONE	BVR

## Conclusions

The deliverable D3.2 has covered the implementation work done on the web-based VICINITY Neighbourhood Manager. This component is crucial for the correct operation of the VICINITY platform because it configures the relationships and sharing rules between different users and items.

As it has been described throughout the document, all core functionalities presented in [2] are available:

- Manage partnership with another organisation;
- Item management and visualization;
- Share data and control of your items;
- Organisation management;
- Integrate IoT infrastructures in VICINITY;
- Integration with other cloud components;
- Search and filtering.

Nevertheless, the project is still under development and there is a need to include new functionalities and improvements. Below are listed the next steps planned to improve the Neighbourhood Manager:

- Updates in the item management area;
- Updates on services and device profiles during VICINITY Pilot site integration;
- Update VICINITY Neighbourhood API during VICINITY Pilot site integration;
- User and administration guides.

For more technical details and information on how to configure and deploy VICINITY Neighbourhood Manager, there is a GitHub repository available [4]. The code state at the time of this deliverable can be found under the tag D3.2. For a complete list of source code changes, the list of project commits can be found under the link below:

<https://github.com/vicinityh2020/vicinity-neighbourhood-manager/commits/master>.

## References

- [1] <http://www.vicinity-h2020.eu>
- [2] D1.5 VICINITY technical requirements specification
- [3] D1.6 VICINITY Architectural Design
- [4] GitHub repository –  
<https://github.com/vicinityh2020/vicinity-neighbourhood-manager.git>.
- [5] VICINITY Neighbourhood Manager API -  
<https://documenter.getpostman.com/view/2413103/vcnt-api-documentation/RVg29U8c>