Granada: Intelligent City Transformation Overview

ICC Final Deliverable

Executive summary

Granada is the capital city of the province of Granada, in the region of Andalusia (Spain). The city hall has worked in the latest years to boost digitalisation and sustainability specially in the sectors of Tourism and Creativity (Arts + Creative Industries).

Granada stands out as one of the few places in Spain where the private sector is more digitally advanced than the public one. The City hall has drastically reduced "digitalisation gap" with various initiatives of great significance.

Digitalisation: several projects from Public Administrations have been developed at regional level such as TurInGranada (a Smart Tourism platform in the province including the City of Granada) and OnGranada (the largest technological and biotechnological cluster of the province). Granada City Hall has been driving the digitalisation process of the city, in this respect it is clear that it had leaded not only the governance of the process but also the practical digitalisation.

Sustainability: Ministry of Ecological Transition has awarded the Granada City Hall for the Most Sustainable City in 2019, for the effort made within the project "Granada walking towards sustainability". Transversal actions have reduced high levels of atmospheric pollution. Recently, the City Hall presented "Granada Destination Tourism Sustainability Plan", in order to offer a more environmental, socioeconomic and territorial sustainability tourism.

As part of our work at ICC we have established an overarching city vision:

To become an international reference in Tourism (including Arts and Creativity) as a focal point of the local economy, and consequently to become the main regional hub or pole for the development of innovative solutions focused on tourists or citizens.

The city solutions aiming at achieving the vision are:

- Green sustainability transition in the tourism sector

- Improvement of energy efficiency in the tourism industry

- Digital transition of the tourism sector

- Competitiveness in tourism

The city of Granada pursued an EU-supported transformation over four main stages, and this document details that journey by these sections

Overview to the city's journey and structure of this document

Reported as one section

1 Preparation & assessment

5 months:
September 2020 – January 2021

2 Ambition & roadmap

3 months:
February 2021 – April 2021

3 Implementation

15 months
May 2021 – July 2022

4 Review & way forward

2 months
August 2022 – September 2022

Summary

Find out where a city is, where it should go and who in the ecosystem is going to mobilise/make things happen

Develop a concrete plan to achieve measured improvements, collaborating with the community; push action with immediate benefits

Get "big moves" done and see results; take action in partnership with others

Measure success, and commit to keep connections and improvements going

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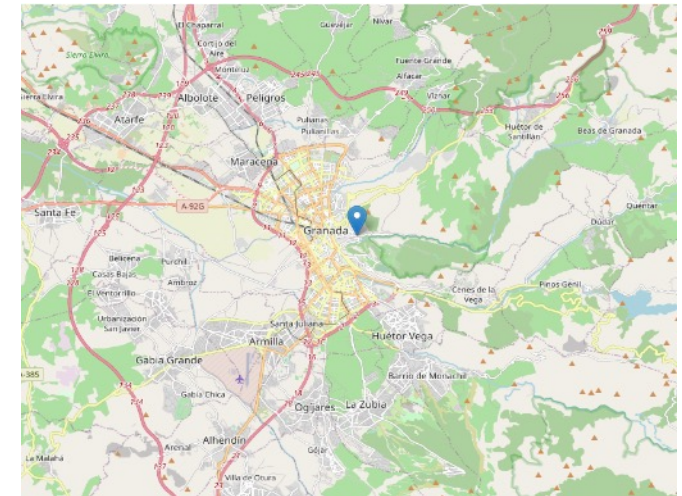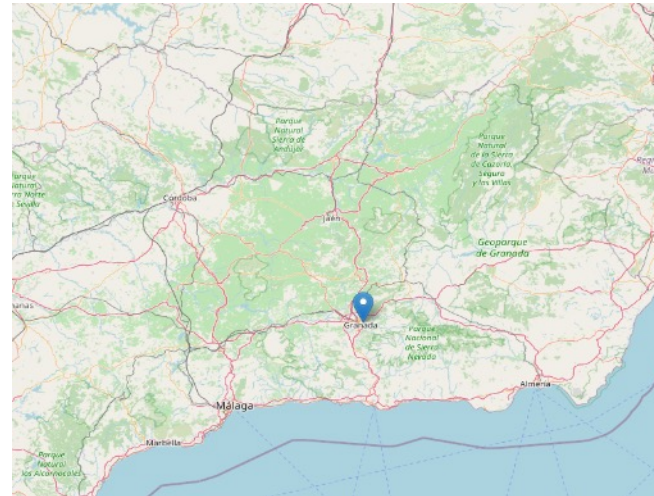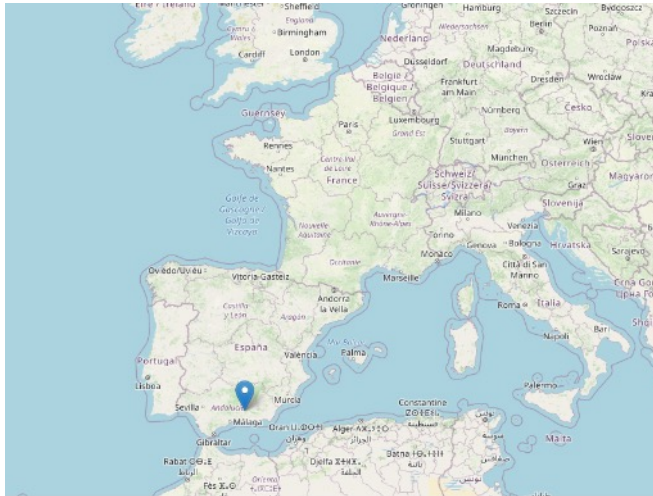**INTELLIGENT CITIES**
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Section

1

Granada: Preparation and assessment

ICC transformation

September 2020 to January 2021

Introduction: The city of Granada

It is geographically located in the **south of Spain**.

Source: GeaMap

Introduction: The city of Granada

- It is the capital city of the province of Granada, in the region of Andalusia.

- Population: 233,648 (20th most populated city in Spain)

- Area: 88,02 km^2

- Economic activity (Number of companies per activity sector):
  - 88% Service sector (mainly Tourism and Trade)
  - 8% Construction
  - 3% Industrial sector
  - 1% Agricultural sector

- La Alhambra (1). The most visited heritage site, and at the same time **the most visited in Spain.**

(1) The Alhambra (lit. 'The Red One') is a palace and fortress complex. It is one of the most famous monuments of Islamic architecture and one of the best-preserved palaces of the historic Islamic world, in addition to containing notable examples of Spanish Renaissance architecture.

City needs: State of the city overview

The state of Granada today

- **Digitalisation:** several projects from Public Administrations have been developed at regional level such as TurInGranada (a Smart Tourism platform in the province including the City of Granada) and OnGranada (the largest technological and biotechnological cluster of the province). Granada City Hall has been driving the digitalisation process of the city, in this respect it is clear that it had leaded not only the governance of the process but also the practical digitalisation.

- **Sustainability:** Ministry of Ecological Transition has awarded the Granada City Hall for the Most Sustainable City in 2019, for the effort made within the project *"Granada walking towards sustainability"*. Transversal actions have reduced high levels of atmospheric pollution. Recently, the City Hall presented *"Granada Destination Tourism Sustainability Plan"*, in order to offer a more environmental, socioeconomic and territorial sustainability tourism.

Key insights from city performance analysis

Higher performance observed	Lower performance observed
1 There is a shared vision on digital and sustainability development, it is almost unanimity (industry knowledge/academia and public administration).	1 Deficient interbusiness and business-knowledge collaboration.
2 Clear compromise at technical level from the administration team of the city, followed by a strong commitment from the digital ecosystem.	2 There is a need to improve the digital/technological capacities of companies, mainly small businesses.
3 There are funds to launch some initiatives thanks to some parallel projects lead by the city.	3 The city should work in short term specific projects, not so much in the long run.
4 Digital infrastructure in Granada is quite well but should continue progressing.	4 It is usual that some initiatives stop at political level, so getting the compromise from the top political layer is a must of the whole process.
5 Open data has been developing in order to benefit businesses and citizens.	5 Most available information or open data is not provided in a suitable format for a correct and easy exploitation.

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City ecosystem

The summary of findings from our stakeholder engagement workshops, local ecosystem enablers and 1:1 interviews are:

■ **Shared aspirations and vision** *– do all stakeholders see the city in the same light and believe we are already on a journey?*

- Stakeholders highlight there is a strong need to identify and share **a common vision on digital and sustainability development** as a clear starting point for the city. Good news is that after the city ecosystem meetings we all realized that stakeholders do share a common vision, so it is just a matter of **establishing and planning it** and working towards getting it done.

- There is a clear compromise at technical level from the **administration team of the city**, followed by a sharp and strong push and commitment from the rest of the stakeholders. We may say the community is absolutely engaged in the process.

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City ecosystem

The summary of findings from our stakeholder engagement workshops, local ecosystem enablers and 1:1 interviews are:

■ **What we bring and how we work together** – what capabilities are different parties bringing to the party? Do we work together well in ecosystem situations?

- **Tourism sector, along with arts and creative industries**, are those that have the greatest potential to find and apply technological solutions that would promote an environment more favourable to the creation and development of businesses in the digital economy.

- The pillars with which the city of Granada should help the private sector in the digital and sustainability challenge, are **the University of Granada** (especially the School of Computer and Telecommunications Engineering) and **the cluster of OnGranada** technology companies.

- The city of Granada considers that **governance is the key element** to achieve a complete and joined digital transformation of all members of the local ecosystem. In this respect, Granada gathered **a broad community engaged** in digital transformation and committed to be active in the overall process of the digital governance.

City ecosystem

The summary of findings from our stakeholder engagement workshops, local ecosystem enablers and 1:1 interviews are:

■ **Urban resources for transformation** – does our wider city more broadly have the typical assets needed for a major transformation like access to capital, a skilled labour force and critical thinking.

- There are **initial funds** to launch some initiatives thanks to some parallel projects lead by the city such as *PSTD* (*Granada Destination Tourism Sustainability Plan*).

- There are **very skilled people** to lead the process from the administration and the private sector.

- The enormous amount and quality of **cultural and tourist heritage should be the main lever** that drives the digitalization and sustainability of the city.

Describe the ICC strategy: Vision and ambition statements

Overarching ICC city vision

To become an international reference in Tourism (including Arts and Creativity) as a focal point of the local economy, and consequently to become the main regional hub or pole for the development of innovative solutions focused on tourists or citizens.

Ambition statement 1

To improve the average level of business digitalization in the target sector Tourism. A fundamental component for the digitalization of the sector is that its companies become active driving elements, for this the level of average business digitalization should rise.

Ambition statement 2

To manage talent as one of the essential components of digitalization in Tourism. An adequate environment must be created in which well trained people can connect in an appropriate way with the business environment.

Ambition statement 3

To encourage entrepreneurship and the creation of innovative companies in Tourism. We must develop more and better tourism sector in Granada, focusing on the creation of value-added companies, as far as possible being disruptive, and always focused on knowledge.

Ambition statement 4

To design and develop collaborative flagship projects in Tourism. We must promote the development of key collaborative projects that generate a driving effect both at the business and economic level, as well as at a social level, involving citizens and tourists, their needs and their benefits.

City strategy: justification

To become an international reference in Tourism (including Arts and Creativity) as a focal point of the local economy, and consequently to become the main regional hub or pole for the development of innovative solutions focused on tourists or citizens.

In Granada, under the scope of this exercise, we identify:

- Tourism as a macro-sector aggregating Tourism, Commerce, Transport and Health.

- Arts and Creativity as a macro-sector aggregating the economic sectors of Culture, Arts and the Creative Industries.

Section

2

Granada: Ambition and roadmap

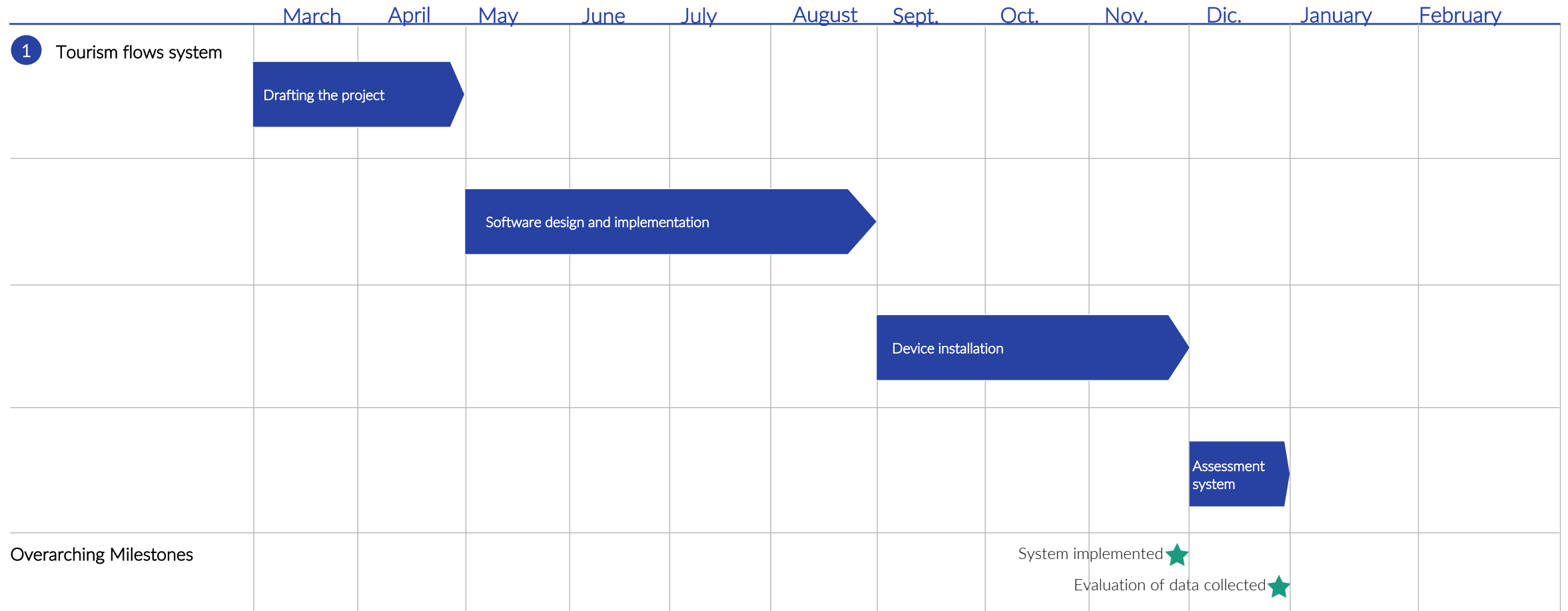ICC Transformation

February 2021 to May 2021

High level implementation roadmap for solution 1 Green sustainability transition in the tourism sector

Green sustainability transition in the tourism sector

2022 - 2023

Activity ★ Milestone

	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dic.	January	February
① Tourism flows system												

Drafting the project

Software design and implementation

Device installation

Assessment system

Overarching Milestones

System implemented ★

Evaluation of data collected ★

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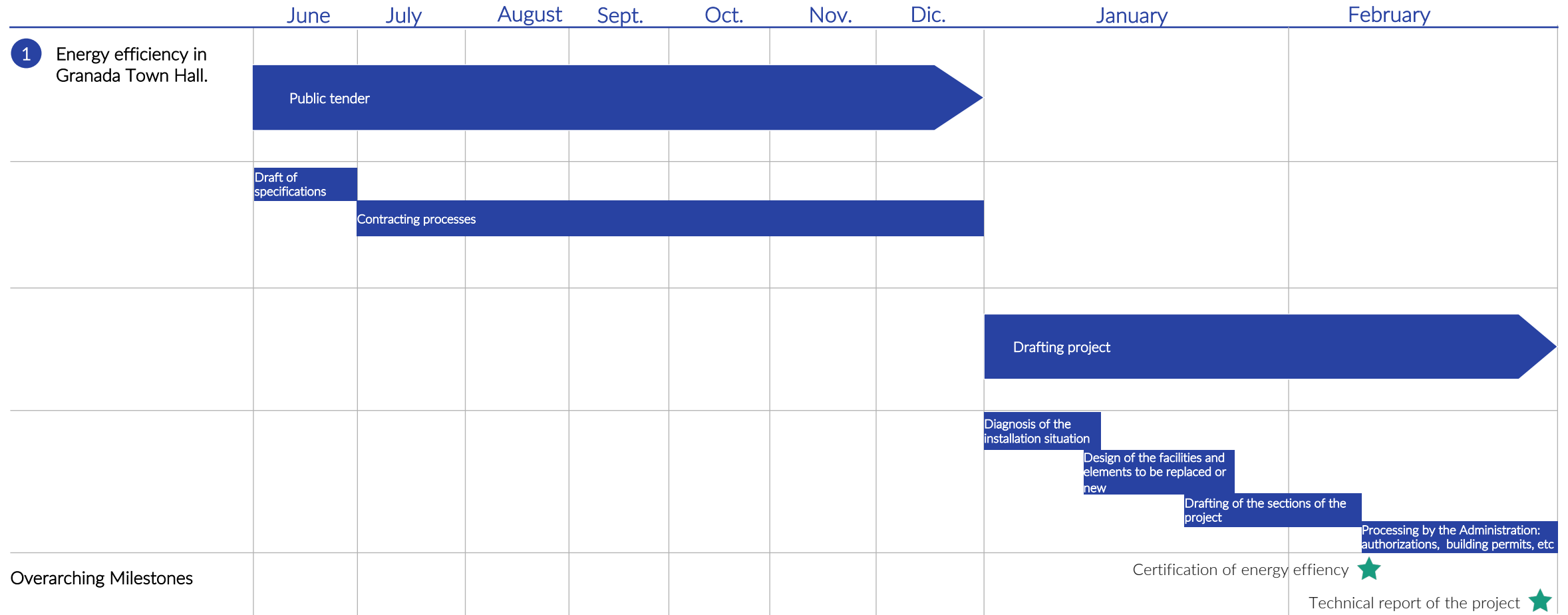INTELLIGENT CITIES
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High level implementation roadmap for solution 2 Improvement of energy efficiency in the tourism industry

Green sustainability transition in the tourism sector

2022 - 2023

Activity ⭐ Milestone

	June	July	August	Sept.	Oct.	Nov.	Dic.	January	February

1 Energy efficiency in Granada Town Hall.

- Public tender
- Draft of specifications
- Contracting processes
- Drafting project
- Diagnosis of the installation situation
- Design of the facilities and elements to be replaced or new
- Drafting of the sections of the project
- Processing by the Administration: authorizations, building permits, etc

Overarching Milestones

Certification of energy effiency ⭐

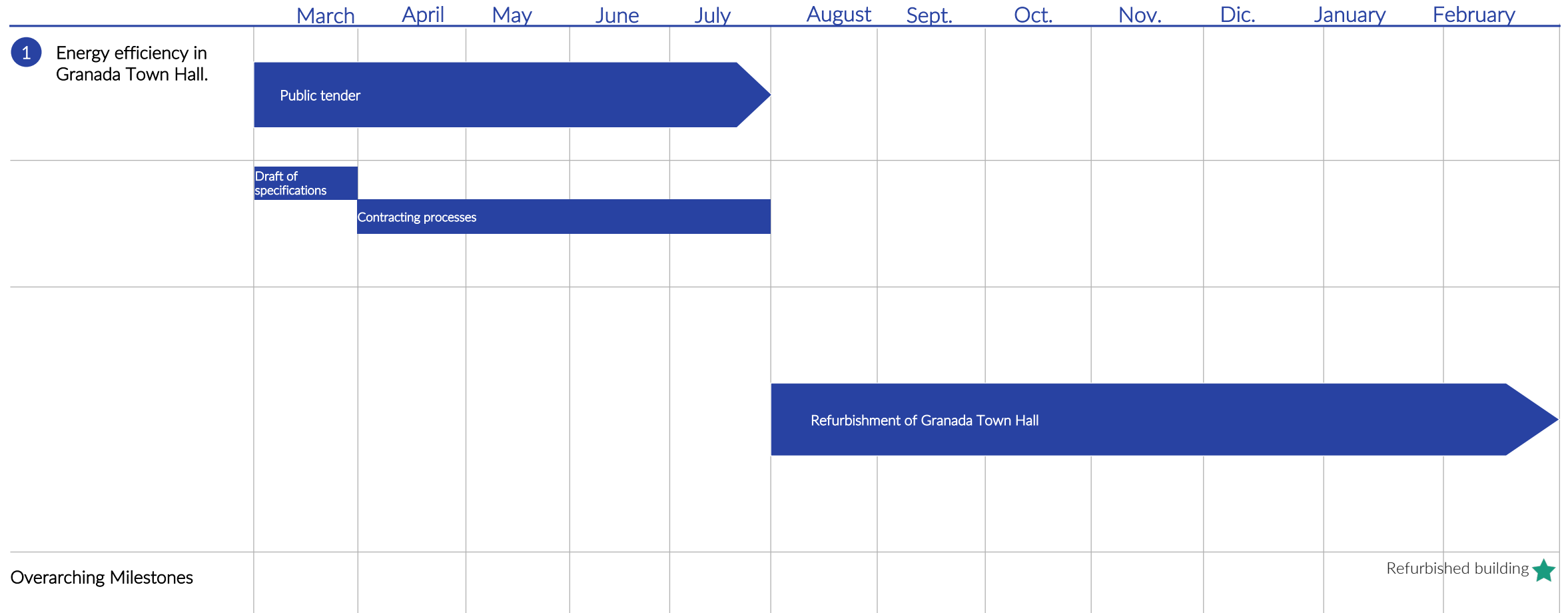Technical report of the project ⭐

High level implementation roadmap for solution 2 Improvement of energy efficiency in the tourism industry

Green sustainability transition in the tourism sector

2023 - 2024
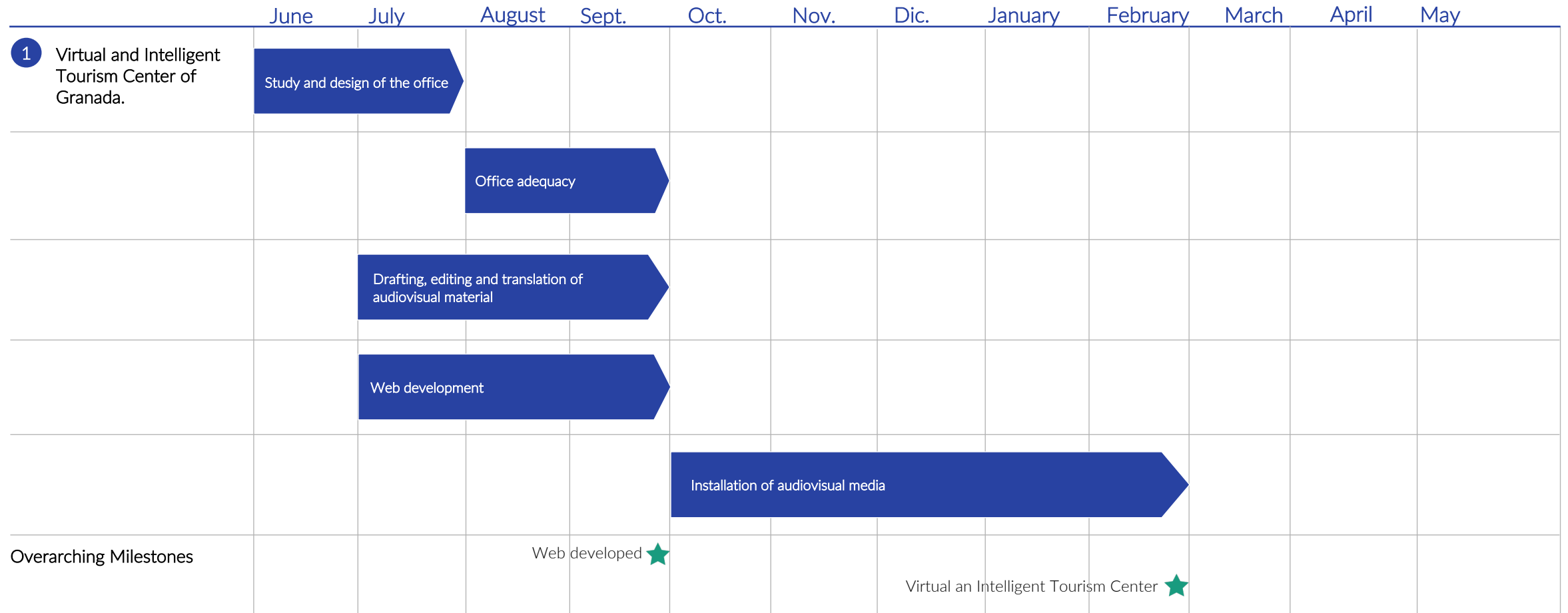
Activity   ★ Milestone

	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dic.	January	February

1 Energy efficiency in Granada Town Hall.

Public tender

Draft of specifications

Contracting processes

Refurbishment of Granada Town Hall
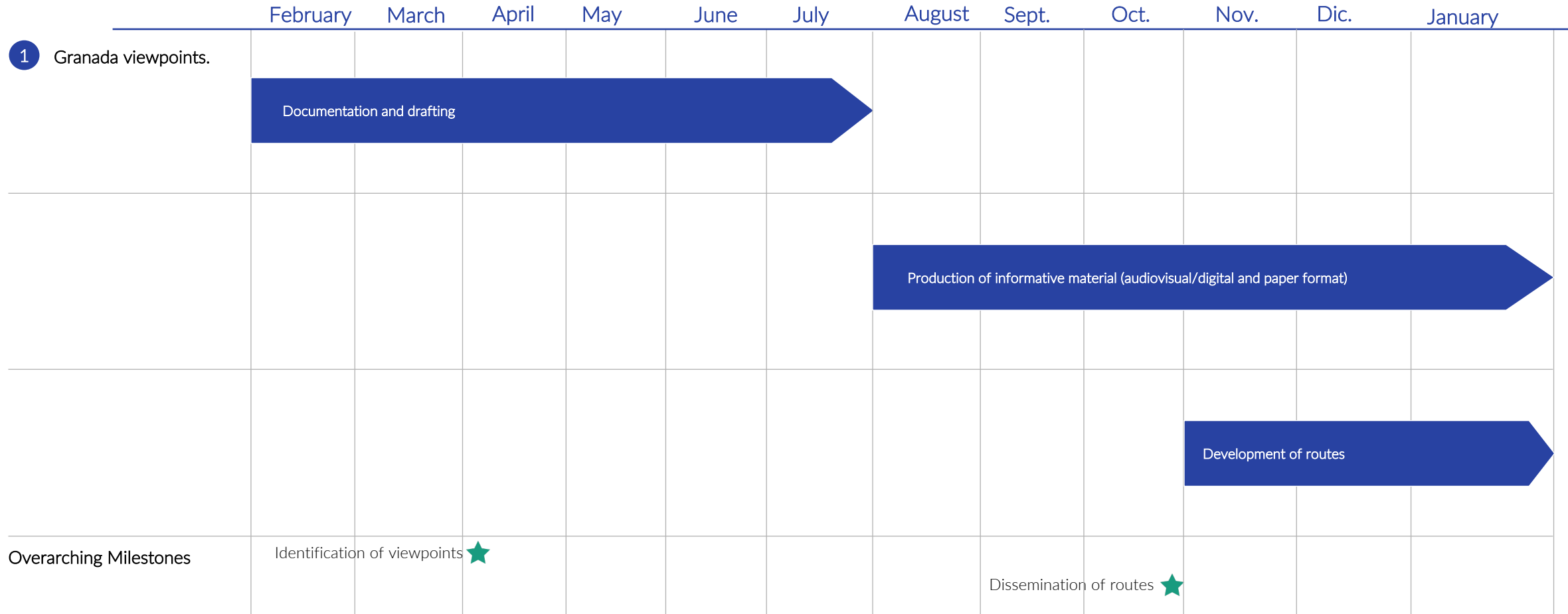
Overarching Milestones

Refurbished building ★

High level implementation roadmap for solution 4 Competitiveness in tourism

Green sustainability transition in the tourism sector

2022 - 2023

Activity   ★ Milestone

	February	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dic.	January
① Granada viewpoints.												
	Documentation and drafting											
							Production of informative material (audiovisual/digital and paper format)					
										Development of routes		
Overarching Milestones	Identification of viewpoints ★											
							Dissemination of routes ★					

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Rationale to road map

Solution #1 Green sustainability transition in the tourism sector	Solution #2 Improvement of energy efficiency in the tourism industry	Solution #3 Digital transition of the tourism sector	Solution #4 Competitiveness in tourism
Implementation of a system for measuring tourist flows in historic neighborhoods of Granada.	To help City Hall of Granada to have more efficient and clean energy.	Implementation of new technologies to the management of tourism.	The creation of new touristic products based on the innovative exploitation of resources.
INITIATIVE	**INITIATIVE**	**INITIATIVE**	**INITIATIVE**
Tourism flows system.	Energy efficiency in Granada Town Hall.	Virtual and Intelligent Tourism Center of Granada.	Granada viewpoints.
BENEFITS	**BENEFITS**	**BENEFITS**	**BENEFITS**
Implementing a measurement system that allow to know the behavior of pedestrian and road traffic flows, in order to be able to design strategies of mitigation that benefit the quality of life of citizens.	Reducing the energy expenditure and the minimization of emissions of the City Town Hall.	To facilitate future tourists who want to know the city and, also visitors can enjoy much more of everything that Granada offers as a tourism destination.	A global project that seeks, through the enhancement of the landscape, to improve the quality of life of citizens and visitors, helping to reinforce Granada's cultural identity.

Rationale to road map

The planning of the roadmap follows the next structure

Solution #1 Green sustainability transition in the tourism sector. Implementation of a system for measuring tourist flows in historic neighborhoods of Granada. Benefits: Implementing a measurement system that allow to know the behavior of pedestrian and road traffic flows, in order to be able to design strategies of mitigation that benefit the quality of life of citizens.

Solution #2 Improvement of energy efficiency in the tourism industry. To help City Hall of Granada to have more efficient and clean energy. Benefits: Reducing the energy expenditure and the minimization of emissions of the City Town Hall.

Solution #3 Digital transition of the tourism sector. Implementation of new technologies to the management of tourism. Implementation of new technologies to the management of tourism. Benefits: To facilitate future tourists who want to know the city and, also visitors can enjoy much more of everything that Granada offers as a tourism destination.

Solution #4 Competitiveness in tourism. The creation of new touristic products based on the innovative exploitation of resources. Benefits: A global project that seeks, through the enhancement of the landscape, to improve the quality of life of citizens and visitors, helping to reinforce Granada's cultural identity.

There are not critical paths involved and there are not resource limitations meaning that there is no need for prioritisation of certain tasks beyond the expected planning

1 Initiative charter Solution 1 Green sustainability transition in the tourism sector

Strategy

Description

What: Tourism flows system initiative.

Why: Granada has had repeated episodes of pedestrian overcrowding and traffic jams that affect the daily life of the neighborhood.

How: Software system design and implementation, and also device installation in historic neighborhoods of Granada.

Link to vision

The vision the initiative links to the development of innovative solutions focused on tourists and citizens.

Link to ambition statement

Relevance to **ambition statement 4** as it involves the data management focus on issues such as traffic and tourism congestion in the city.

Expected impact and timing

By the time the installation is completed, and the system is put into operation, it will measure the most touristic visited areas of Granada.

Stakeholders involved

Solution lead: Granada City Hall.

Solution working team:
- Steering Board (SB).
- Coordinator (C).
- Granada City Hall (Tourism department).

Contributors: Medialab UGR (University of Granada).

Risks and mitigation

Risks: Delays in software development. Difficulties in interoperability of data.

Challenges: That the flows system have adequate maintenance and operation during its useful life.

Mitigating measures: Continuous evaluation of the project's progress, evaluating the fulfillment of each defined milestone.

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Source of funding: Tourist Plan for Large Cities – Granada.

Estimate of the cost: 15.000,00 €.

Solution maturity outputs

KPIs Inputs
- Number of control devices available for traffic and tourism congestion.
- Number of tourist places with traffic and tourism congestion.

KPIs Actions
- Project draft.
- Official identification and assignment of funds.
- Specifications.
- Public tender.
- Contracting process.
- Software design.
- Software implementation.
- Device installation.
- Assessment system.

KPIs Outputs
- Number of control devices deployed. **Target:** 10 control devices deployed.
- % increase in control devices for traffic and tourism congestion. **Target:** 90% growth in control devices for traffic and tourism congestion.
- Extent of data available for measurement traffic and tourism congestion. **Target:** 7 (level of extent from 1 to 10).

City performance outcomes and impacts

KPIs Outcomes and impacts
- % of traffic congestion per tourist area. **Target:** 5% of traffic congestion per tourist area.
- % of tourism congestion per tourist area. **Target:** 5% of tourism congestion per tourist area.

Initiative charter Solution 2 Improvement of energy efficiency in the tourism industry

①

Strategy

Description

What: Energy efficiency in Granada Town Hall initiative.

Why: Building facilities are partly obsolete and inadequate, since over time they have deteriorated and a corrective maintenance is not enough to its optimal operation.

How: Diagnosis of the installation situation and design of the facilities and elements to be replaced or new.

Link to vision

The vision the initiative links to the development of innovative solutions focused on citizens.

Link to ambition statement

Relevant to **ambition statement 1** as it involves the improvement of the digitalization of a emblematic and touristic building of the city.

Relevance to **ambition statement 4** as it involves the reduction of energy costs and economic savings for public administration.

Expected impact and timing

At the moment in which the works are completed and the facilities start their activity, Granada Town Hall will be a energy efficient building.

Stakeholders involved

Solution lead: Granada City Hall.

Solution working team:
- Steering Board (SB).
- Coordinator (C).
- Granada City Hall (Tourism department).

Contributors: Medialab UGR (University of Granada).

Risks and mitigation

Risks: none.

Challenges: That the facilities have adequate maintenance and operation during their useful life.

Mitigating measures: Re-planning of pending tasks to recover the deadline if there is a delay, as well as allocation of more resources for the execution of tasks in less time.

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Source of funding: Integrated sustainable urban development strategy (EDUSI) of Granada.

Estimate of the cost: 530.000,00 €

Solution maturity outputs

KPIs Inputs
- % energy efficiency of the building.
- Amount of CO2 emissions.

KPIs Actions
- Official identification and assignment of funds.
- Specifications.
- Public tender.
- Contracting process.
- Final design.
- Refurbishment.

KPIs Outputs

- % increase of energy efficiency of the building. **Target:** 90% growth of energy efficiency of the building.

- % decrease of CO2 emissions. **Target:** 60% decrease of CO2 emissions.
- % renewable power use. **Target:** 40% renewable power use.

City performance outcomes and impacts

KPIs Outcomes and impacts
- City Council satisfaction level on increasing energy efficiency of Town Hall. **Target:** 9 (level of satisfaction from 1 to 10).
- % of reduction in public spending on energy consumption. **Target:** 70% of reduction in public spending on energy consumption.

① Initiative charter Solution 3 Digital transition of the tourism sector

Strategy

Description

What: Virtual and Intelligent Tourism Center of Granada initiative.

Why: A virtual and intelligent tourism office as one of the key elements to becoming Granada as a Smart tourism destination.

How: Office adequacy, drafting audiovisual material, web development and installation of audiovisual media.

Link to vision

The vision the initiative links to the development of innovative solutions focused on tourists.

Link to ambition statement

Relevance to **ambition statement 1** as the initiative improves the level of digitalization of the public administration.

Relevance to **ambition statement 2** as the initiative required the training of the staff of the Tourism area in the handling of technology devices.

Relevance to **ambition statement 4** as the initiative unifies the entire tourist offer in a digital way.

Expected impact and timing

When the tourist center starts using the facilities and the new website is launched, it will be offered a new image of tourism of the Granada.

Stakeholders involved

Solution lead: Granada City Hall.

Solution working team:
- Steering Board (SB).
- Coordinator (C).
- Granada City Hall (Tourism department).

Contributors: Medialab UGR (University of Granada).

Risks and mitigation

Risks: Lack of interest from visitors and tourists to visit the tourism center or website.

Challenges: That the virtual center and web integrate all the information in a dynamic way through new technologies and present it to future tourists and visitors.

Mitigating measures: Doing promotion actions of the new tourism center and web.

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Source of funding: Tourist Plan for Large Cities – Granada.

Estimate of the cost: 286.000,30 €

Solution maturity outputs

KPIs Inputs
- Number of visitors of the current tourism office per period of time.
- Number of visits of the current web.

KPIs Actions
- Official identification and assignment of funds.
- Specifications.
- Public tender.
- Contracting process.
- Study and design of the office.
- Drafting, editing of audiovisual material.
- Web development.
- Office adequacy.
- Installation of audiovisual media.

KPIs Outputs
- Number of visitors of the virtual center per period time. **Target:** 20% growth.
- Number of visits of the new web. **Target:** 25% growth.
- Extent of tourist information available. **Target:** 8 (level of extent from 1 to 10).
- Number of technology devices deployed. **Target:** 35% growth.

City performance outcomes and impacts

KPIs Outcomes and impacts
- Total number of innovation solutions implemented. **Target:** 3.
- % of tourists' satisfaction. **Target:** 90% of tourists saying high or very high level of quality of the Tourism Center.

① Initiative charter Solution 4 Competitiveness in tourism

Strategy

Description

What: Granada viewpoints initiative.

Why: It is intended to extend the network of viewpoints to other less known areas of the city with a high cultural potential. At the same time, to eliminate congestion in strategic points of the Albaicín neighborhood, which are currently very pressured by the tourist flow.

How: Production of informative material and development of routes and guided tours.

Link to vision

The vision the initiative links to the development of innovative solutions focused on tourists and citizens.

Link to ambition statement

Relevance to **ambition statement 3** as the project aims to encourage the creation of innovative business in the field of Granada's viewpoints. Relevance to **ambition statement 4** as a flagship project that seeks to improve the quality of life of citizens and visitors.

Expected impact and timing

By the time the project is completed and its implementation starts, the initiative will reinforce Granada's cultural identity through the enhancement of the landscape.

Stakeholders involved

Solution lead: Granada City Hall.

Solution working team:
- Steering Board (SB).
- Coordinator (C).
- Granada City Hall (Tourism department).

Contributors: Medialab UGR (University of Granada).

Risks and mitigation

Risks: Lack of interest from visitors and tourists.

Challenges: Convincing the tourist companies to join the project and promote their businesses.

Mitigating measures: Doing promotion actions before starting the development of the routes and guided tours.

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Source of funding: Tourist Plan for Large Cities – Granada.

Estimate of the cost: 110.200,00 €

Solution maturity outputs

KPIs Inputs
- Number of viewpoints per touristic area.
- Number of historical buildings and monuments per touristic area.

KPIs Actions
- Official identification and assignment of funds.
- Specifications.
- Public tender.
- Contracting process.
- Documentation and drafting.
- Production of informative material.
- Development of routes.

KPIs Outputs
- Number of historical guided tours implemented. **Target:** 9 tours.
- Number of gastronomic routes implemented. **Target:** 9 routes.

City performance outcomes and impacts

KPIs Outcomes and impacts
- Total number of viewpoints implemented. **Target: 2**.
- % of tourists' satisfaction. **Target:** 90% of tourists saying high or very high level of quality of the visited viewpoints.

Key Performance indicators – Activities (inputs and actions)

Solution	Initiative	Activities – Inputs and actions
Green sustainability transition in the tourism sector	Tourism flows system	• Number of control devices available for traffic and tourism congestion. • Number of tourist places with traffic and tourism congestion. ACTIONS • Project draft • Official identification and assignment of funds • Specifications • Public tender • Contracting process • Software design • Software implementation • Device installation • Assessment system

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Key Performance indicators – Activities (inputs and actions)

Solution	Initiative	Activities – Inputs and actions
Improvement of energy efficiency in the tourism industry	Energy efficiency in Granada Town Hall	• % energy efficiency of the building. • Amount of CO_2 emissions. ACTIONS • Official identification and assignment of funds • Specifications • Public tender • Contracting process • Final design • Refurbishment

Key Performance indicators – Activities (inputs and actions)

Solution	Initiative	Activities – Inputs and actions
Digital transition of the tourism sector	Virtual and Intelligent Tourism Center of Granada	• Number of visitors of the current tourism office per period of time. • Number of visits of the current web. ACTIONS • Official identification and assignment of funds • Specifications • Public tender • Contracting process • Study and design of the office • Drafting, editing of audiovisual material • Web development • Office adequacy • Installation of audiovisual media

Key Performance indicators – Activities (inputs and actions)

Solution	Initiative	Activities – Inputs and actions
Competitiveness in tourism	Granada viewpoints	• Number of viewpoints per touristic area. • Number of historical buildings and monuments per touristic area. ACTIONS • Official identification and assignment of funds • Specifications • Public tender • Contracting process • Documentation and drafting • Production of informative material • Development of routes

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Key Performance indicators – solution maturity (outputs)

Solution	Initiative	Solution Maturity - outputs	Targets
Green sustainability transition in the tourism sector	Tourism flows system	Number of control devices deployed.	10 control devices deployed.
Green sustainability transition in the tourism sector	Tourism flows system	% increase in control devices for traffic and tourism congestion.	90% growth in control devices for traffic and tourism congestion.
Green sustainability transition in the tourism sector	Tourism flows system	Extent of data available for measurement traffic and tourism congestion.	7 (level of extent from 1 to 10).

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Key Performance indicators – solution maturity (outputs)

Solution	Initiative	Solution Maturity - outputs	Targets
Improvement of energy efficiency in the tourism industry	Energy efficiency in Granada Town Hall	% increase of energy efficiency of the building.	90% growth of energy efficiency of the building.
Improvement of energy efficiency in the tourism industry	Energy efficiency in Granada Town Hall	% decrease of CO_2 emissions.	60% decrease of CO_2 emissions.
Improvement of energy efficiency in the tourism industry	Energy efficiency in Granada Town Hall	% renewable power use.	40% renewable power use.

Key Performance indicators – solution maturity (outputs)

Solution	Initiative	Solution Maturity - outputs	Targets
Digital transition of the tourism sector	Virtual and Intelligent Tourism Center of Granada	Number of visitors of the virtual center per period time.	20% growth.
Digital transition of the tourism sector	Virtual and Intelligent Tourism Center of Granada	Number of visits of the new web.	25% growth.
Digital transition of the tourism sector	Virtual and Intelligent Tourism Center of Granada	Extent of tourist information available.	8 (level of extent from 1 to 10).
Digital transition of the tourism sector	Virtual and Intelligent Tourism Center of Granada	Number of technology devices deployed.	35% growth.

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Key Performance indicators – solution maturity (outputs)

Solution	Initiative	Solution Maturity - outputs	Targets
Competitiveness in tourism	Granada viewpoints	Number of historical guided tours implemented.	9 tours.
Competitiveness in tourism	Granada viewpoints	Number of gastronomic routes implemented.	9 routes.

Key Performance indicators

Solution	Initiative	City performance – outcomes and impacts	Targets	Link to SDGs (optional)
Green sustainability transition in the tourism sector	Tourism flows system	% of traffic congestion per tourist area.	5% of traffic congestion per tourist area.	• 11 Sustainable cities and communities. • 13 Climate action.
Green sustainability transition in the tourism sector	Tourism flows system	% of tourism congestion per tourist area.	5% of tourism congestion per tourist area.	• 11 Sustainable cities and communities.

Key Performance indicators

Solution	Initiative	City performance – outcomes and impacts	Targets	Link to SDGs (optional)
Improvement of energy efficiency in the tourism industry	Energy efficiency in Granada Town Hall	City Council satisfaction level on increasing energy efficiency of Town Hall.	9 (level of satisfaction from 1 to 10).	• 7 Affordable and clean energy. • 9 Industry, innovation and insfrastructure. • 13 Climate action.
Improvement of energy efficiency in the tourism industry	Energy efficiency in Granada Town Hall	% of reduction in public spending on energy consumption.	70% of reduction in public spending on energy consumption.	• 7 Affordable and clean energy. • 11 Sustainable cities and communities.

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Key Performance indicators

Solution	Initiative	City performance – outcomes and impacts	Targets	Link to SDGs (optional)
Digital transition of the tourism sector	Virtual and Intelligent Tourism Center of Granada	% growth of visitors per period time.	10% growth.	12 Responsible consumption and production.
		Daily expenses of tourists (medium value).	5% growth.	12 Responsible consumption and production.
Competitiveness in tourism	Granada viewpoints	Satisfaction level of visitors about the perceived touristic image of Granada city.	30% growth.	11 Sustainable cities and communities.

Key Performance indicators - Cross cutting indicators

Cross cutting indicators
Number of new relationships with new stakeholders.
% of activities completed on time.
% of investment spent.
Number of new employees created.
% of citizens who have heard about the initiative.
% of citizens who are agree that the initiative has had a positive impact on the city.

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Governance structure for roadmap implementation

Granada Social Council

Steering Board (SB)

Coordinator (C)

Granada City Hall
(Tourism Dpt.)

Doer 1
(D1)

Doer 2
(D2)

Doer 3
(D3)

Doer n
(DN)

Section

3+4

Granada: Impact

ICC Transformation

Impact executive summary

With respect to the participation of Granada in the ICC initiative, the major successes during the project have been:

1. Establishing a strong ecosystem.

2. Setting up a robust and resilience governance structure.

3. Achieving significant and tangible results.

4. Establishing the necessary contacts with companies and stakeholders for the successful implementation of solutions.

5. Dissemination of projects and results.

The main KPIs obtained so far are:

Solution #1 Green sustainability transition in the tourism sector. Implementation of a system for measuring tourist flows in historic neighborhoods of Granada. **Tender specifications elaborated**

Solution #2 Improvement of energy efficiency in the tourism industry. To help City Hall of Granada to have more efficient and clean energy. **Contract already signed**

Solution #3 Digital transition of the tourism sector. Implementation of new technologies to the management of tourism. Implementation of new technologies to the management of tourism. **Tender specifications under elaboration**

Solution #4 Competitiveness in tourism. The creation of new touristic products based on the innovative exploitation of resources. **Contract already signed**

Some of the cross cutting indicators to be measured in the next months will be:
- Number of new relationships with new stakeholders.
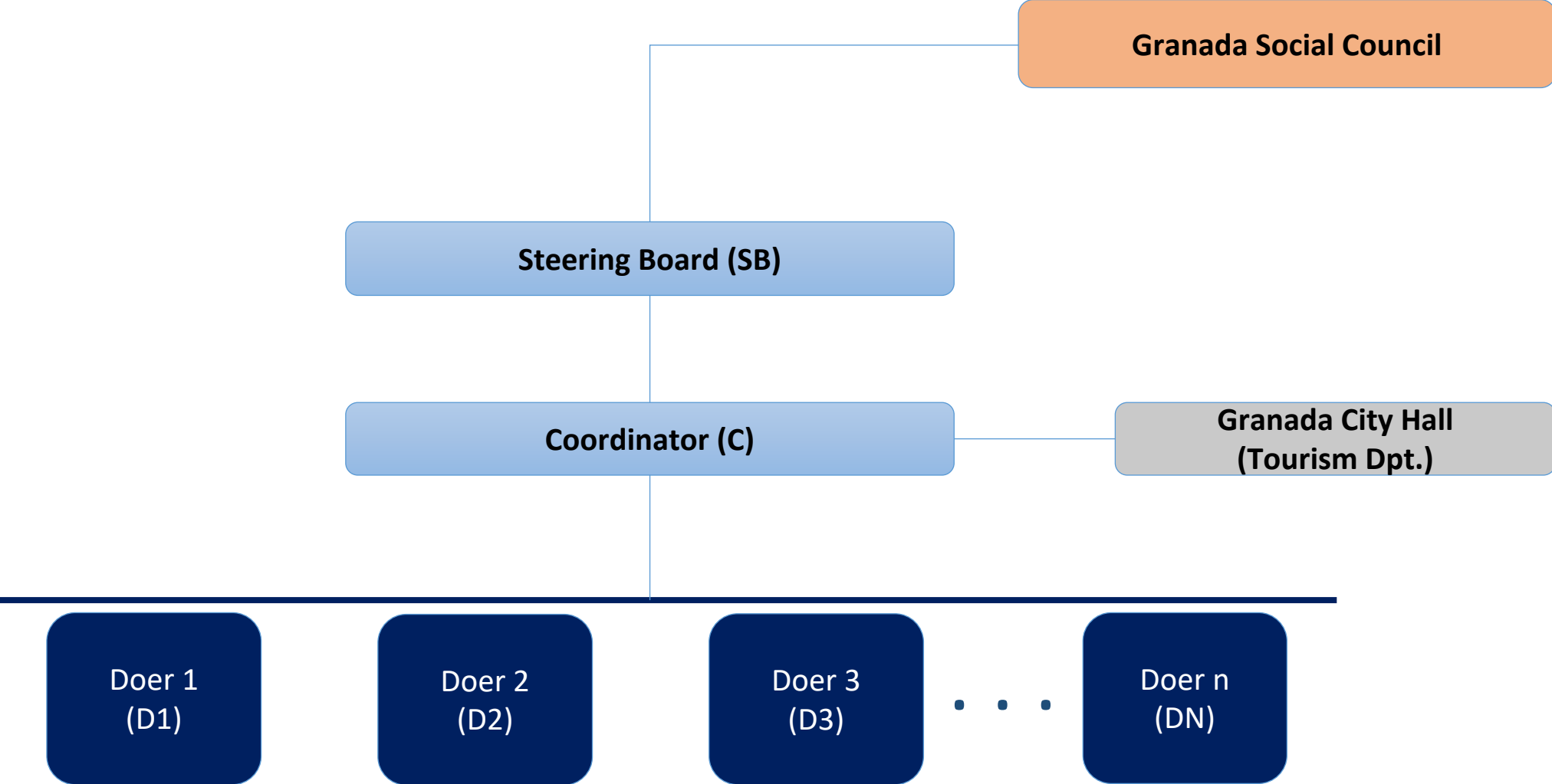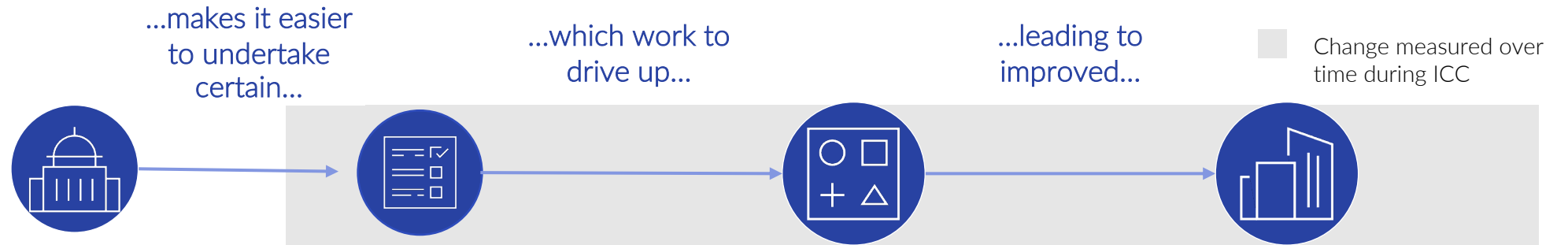- % of activities completed on time.
- % of investment spent.
- Number of new employees created.
- % of citizens who have heard about the initiative.
- % of citizens who are agree that the initiative has had a positive impact on the city.

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There are four types of measurable concepts that come together to drive success in the ICC

...makes it easier to undertake certain...

...which work to drive up...

...leading to improved...

Change measured over time during ICC

	Local enablers – Digital community	Activities – Green and digital transition	Technology maturity – Granada tourism hotspot	City performance – Number, quality and loyalty of visitors
Idea	Local enablers – Digital community	Activities – Green and digital transition	Technology maturity – Granada tourism hotspot	City performance – Number, quality and loyalty of visitors
Description	There is an emerging digital community in Granada that needs to grow and consolidate the digital message and get promising results to reach the whole society. Granada has a committed kernel on which to grow: University UGR, PTS, OnGranada.	Implementation of a system for measuring tourist flows in historic neighborhoods of Granada and the Implementation of new technologies at the new Virtual and Intelligent Tourism Center in the city of Granada	Their main advantages are that they have an active innovation ecosystem supporting them, as well as there is a strong stimulation of the entrepreneurship spirit within the industry.	Success of an intelligent city is ultimately measured by its ability to address city needs. These can be considered an improved quality of citizen life and a better environment for stakeholders
Example	A strong and growing active digital community in Granada...	...allows the design and implementation of activities and projects making Granada greener and more digital...	...leads to the implementation of new digital technologies throughout the whole city...	...resulting in a positive impact in both groups, the local citizens and the tourists & visitors

Assessment of city performance - discussion

In order to assess the city performance of Granada during ICC we want to highlight that we have been very successfully developing the following tools and requirements:

Commitment of city stakeholders
Identification and sharing a common vision on digital development
Governance
Selection of initial initiatives
Implementation of collaborative flagship initiatives
Measurement of real impact
Dissemination of results

Now we need to know more about:
Governance
Funding
Implementation of singular projects

Assessment of solution maturity - discussion

Granada is currently implementing 4 main actions involving digital technologies and aiming at improving the green and digital proposal of the city. The assessment of solution maturity at each of the actions is:

Solution #1 Green sustainability transition in the tourism sector. Implementation of a system for measuring tourist flows in historic neighborhoods of Granada. **Tender specifications elaborated**

Solution #2 Improvement of energy efficiency in the tourism industry. To help City Hall of Granada to have more efficient and clean energy. **Contract already signed**

Solution #3 Digital transition of the tourism sector. Implementation of new technologies to the management of tourism. Implementation of new technologies to the management of tourism. **Tender specifications under elaboration**

Solution #4 Competitiveness in tourism. The creation of new touristic products based on the innovative exploitation of resources. **Contract already signed**

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Assessment of city ecosystem and activities - discussion

Regarding the assessment of our city ecosystem and the activities we designed and developed together we may highlight:

- Commitment of city stakeholders
- Identification and sharing a common vision on digital development
- Governance
- Selection of initial initiatives
- Implementation of collaborative flagship initiatives
- Measurement of virtual impact
- Dissemination of results

- Number of agents contributing to the ICC strategy. **Target:** >10. So far we got 12
- Establishment of bilateral MoUs. **Target:** >1. So far we got 1
- Number of ecosystem activities per year. **Target:** 4. So far we organised 3

5 key lessons

Lesson	Reflections
1	It is important that we correctly define the role the local government will play in the city's digital transformation
2	We should push the local ecosystem to be part of the strategy from the very beginning
3	We should identify the potential synergies between the digital transformation strategy and other existing strategies
4	It is good for the strategy to design a plan with short term implementation potential, but which remains relevant for longer-term ambitions
5	For the leading role of the strategy, it is mandatory that we select the right person, with the right commitment and the proper links with the local ecosystem

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Reflections on city collaborations

We worked with some other cities during the workshops. From this collaborative approach we got very interesting and fruitful experiences.

We collaborated and exchanged information and experiences among other with the next cities:

- Heraklion
- Venezia
- Kavala
- Thessaloniki

On top of that we found extremely interesting the approach shared with all of us by:

- Aarhus
- Toronto

Commitments

Commitments to on-going resources	Commitments to on-going collaboration	Commitments to on-going KPIs
Assign financial resources to new digital projects from own resources Submit proposals to get external funding to new digital projects	Increase the number of active stakeholders Establish a number of bilateral agreements	• Number of new relationships with new stakeholders. • % of activities completed on time. • % of investment spent. • Number of new employees created. • % of citizens who have heard about the initiative. • % of citizens who are agree that the initiative has had a positive impact on the city.

3 Year plan - ambitions

Building on the ICC, what would will the city aim to achieve in 3 years time?	To reinforce Granada's cultural identity through the enhancement of the landscape. To offer a new fresh image of tourism in Granada. To push for energy efficient buildings all around the city. To increase the number of digital services for citizens and tourists.
What steps will you take over the next 3 years to achieve these goals?	Reinforce the strategy Reinforce the management team Increase the digital ecosystem Collaborate with other EU cities Push new projects Look for financing opportunities

3 Year plan - targets

KPI	Category	What commitments will the city make to this end?
1	• Number of new relationships with new stakeholders.	• Give management team resources to extend the ecosystem
2	• % of investment spent.	• Assign proper resources and make a follow up
3	• Number of new employees created.	• Collaborate with the ecosystem. Push for the identification of new employment areas
4	• % of citizens who have heard about the initiative.	• Increase the communication and marketing resources
5	• % of citizens who agree that the initiative has had a positive impact on the city.	• Get the involvement of citizenship in the definition of the strategy and the identification of specific projects