Project Characteristics

Project information

Please provide important facts for your project, e.g. acronym, title, proposed period, principal investigator and contractor.

Project	
Acronym	SANPIC
Title	Salzburg Airport noise pollution impact analysis to city demographics
Period	Start: May 2020 End: June 2020
Principal investigator	Rochamukti Rizcanofana, Stephanie Tumampos Prof. Manfred Mittlböck, Prof. Barbara Hofer
Contractor	IndoPhil Services

Document version

Nr.	Date	Version	Altered chapters	Type of altering	Author
1	04.05.2020	1.1	all	Creation	Stephanie Tumampos Rochamukti Rizcanofana
2	11.05.2020	1.2	Resources and Budget, Project Structure, Work Plan, Milestone plan, Gantt Chart	Update	Stephanie Tumampos Rochamukti Rizcanofana
3	17.05.2020	1.3	Work Packages and Approval	Revision and Signature	Stephanie Tumampos Rochamukti Rizcanofana
4					
5					

Project Content and Project Goals

Please provide an overview of your project with its main activities. Additionally give some information on the purpose, benefits and target groups as well as the proposed goals of your project. Please also provide explicit information on those aspects of the overall challenges, which you will not tackle with your project.

Content & Goals

Project description *(~100-150 words)*

Salzburg Airport noise pollution impact analysis to city demographics (SANPIC) is an open access application that visualizes the noise pollution emitted by airplanes in and out of Salzburg Airport, and how it affects areas surrounding the facility. With the app, users can choose which establishments related to certain demographics (e.g. kindergarten, hospital, elderly care houses) can be viewed on the screen through the layers option. Based on the proximity of these establishments to the airport, an evaluation can be made if it is too near or too far to be affected by the airport noise pollution. SANPIC app will help them decide better in urban planning construction and can help in mitigating certain effects of noise pollution to certain groups of people.

Project purpose, benefits and target group description *(~100 words)*

The purpose of SANPIC is to provide an interactive webmap app that can help the government, stakeholders and even the public, understand spatial implications of urban planning set-ups around Salzburg airport, a facility that is already surrounded by commercial and residential establishments. SANPIC intends to provide public awareness on the noise pollution an airport facility brings particularly affecting specific demographic groups such as the elderly and kids. With SANPIC, government and stakeholders can identify future problems that may arise around the facility, support regulations and improve facilities. It can also help the public in better urban planning decisions.

Project objectives (please also include a listing of the sub-goals) *(~100 words)*

Project SANPIC aims to provide a visual representation of the noise pollution occurring in Salzburg Airport due to the incoming and outgoing flights in the facility, and its impact towards the inhabitants of the city. Specifically, it intends to deliver an interactive webmap application where noise pollution of incoming and outgoing flights with the corresponding sound range is visualized per hour. Layers of establishments corresponding to their demographic category are also included in the app. Lastly, SANPIC app will analyze the impact of noise pollution surrounding the airport.

Non-Goals

None.

Frame of the project

Please provide a description of the existing situation. Therefore, please describe the actual state and the identified challenges. As a second part, please also provide the most important information with regard to the proposed project period and the most important dates (Kick-off, interim/mid-term report/presentation, final report, paper submission etc.)
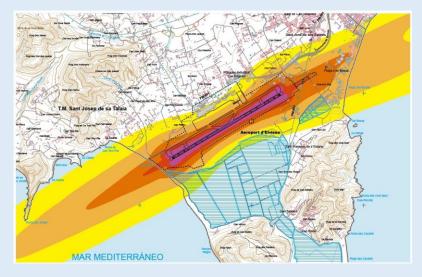
Context

Up-to-date status *(~50-100 words)*

According to the European Environmental Agency (EEA)[1], the percentage of the population that has been exposed to high noise levels from airplanes in Salzburg is the second highest in Austria. Therefore, the Salzburg government should consider the noise pollution impact in the city planning and policy-making. Currently there is no spatial media that provides information and visualization of the noise pollution impact to the population in Salzburg.

The SARPIC project is established to support the Salzburg government, by presenting air traffic data and its noise impact to the surrounding area of Salzburg airport using a web-map. Unfortunately, due to the current Covid-19 situation, many flights have been cancelled. It would probably affect the real-time air traffic visualisation, starting from February 2020. However, we would try to enrich the web-map by adding historical flight data.

Project setting *(~50 Wörter)*

The air traffic data would be derived from Opensky (https://opensky-network.org/) and the source of demographic data is the Salzburg Open Government Data portal. All of the managerial works of this project would be conducted using Gitlab and Gantt Chart monitoring. The project output is an interactive web map, with the visualization of the noise pollution impact from airplanes during take-off and landing in Salzburg airport. Example of intended result is a noise contour map as follows:

(Source: EASA,2020)

Dates			
Time period			
Start:	**01.05.2020**	End	**23.06.2020**
Important Dates			
1	01.05.2020	Kick-off meeting	
2	26.05.2020	- Project progress review meeting - Interim report	
3	23.06.2020	- Final presentation - Final project report	

Resources & Budget

Please provide information on the project lead and the project team. Please include information on name, role and qualification. Additionally provide information about the planned resources with regard to personal costs and other costs,

Project Team
Projekt Lead
Stephanie Tumampos Qualification: Copernicus Master in Digital Earth Student Role(s): - Provide and clarify the project duties to the team members - Ensuring that the project is on-schedule (time management) - Communicating with the project owner and stakeholders - Collecting data source and metadata
Project Team
Rochamukti Rizcanofana Qualification: Copernicus Master in Digital Earth Student Role(s): - Preparing technical requirements of the project - Literature study - Establish the database storage - Troubleshooting

Resources

Personal costs

Equipment:

- Computer/Laptop
  - owned
  - for simulation and analysis
- Mobile phones
  - owned
  - For communication purposes
- Cameras
  - owned
  - For documentation

Services:

- Communication and Data Services
  - Telecommunication and data services
  - Cost: €30 per month (each individual)
- Transportation cost
  - Site visits
  - Cost: €60 per month (each individual)

Software Solutions:

- ArcGIS Pro
  - Internal or No cost
- PostgreSQL
  - Internal or No cost

Project costs

Labor:
- Project Lead
  - €40 per hour (net)
  - max of 20 hours per week until project end (9 weeks)
  - no overtime costs
  - Estimated Maximum Pre-total: €7,200

- Project Team
  - €35 per hour (net)
  - max of 20 hours per week until project end (9 weeks)
  - no overtime costs
  - Estimated Maximum Pre-total: €6,300

Materials:
- Office supplies
  - Capped cost: €250
- Documentation
  - Publishing services cost: €400

Equipment:
- Noise Level Meter
  - Outdoor Aircraft Noise Meter PCE-428-EKIT
    - Measuring range: 25-136 dbA
    - Accuracy: Class 2
    - Frequency Range 20 Hz - 12.5kHz
    - Automatic measurement with data storage 24 hours
    - More information: www.pce-instruments.com
    - Price: €4,440 (price with VAT)

Facilities:
- Meeting places
  - Meeting rooms and food
  - Capped cost: €500
- Co-working spaces
  - Co-working spaces
  - Capped cost: €500

Software:
- Survey123 (tentative)
  - No cost

Contingency Costs:
- Setting the contingency cost at 15% of the estimated total projected budget
  - Estimated Contingency Cost: €2960

Other Costs

€0-

Total Budget Cost: €22,690

Project structure, description and risk matrix

Please provide a description about your work plan (work breakdown structure) your work packages in tabular and graphical form.

Work packages overview:

WP	Name	Time Frame
1	Project Management	01.05.2020 – 24.06.2020
2	Gap Analysis	03.05.2020 - 11.05.2020
3	Data Collection and organisation	11.05.2020 - 26.05.2020
4	Visualizing Noise Pollution	27.05.2020 - 09.06.2020
5	Build Service Environment	10.06.2020 - 16.06.2020
6	Build Web-Map	17.06.2020 - 23.06.2020

Work Breakdown Structure (WBS)

Create a work breakdown structure for your work packages including the important tasks
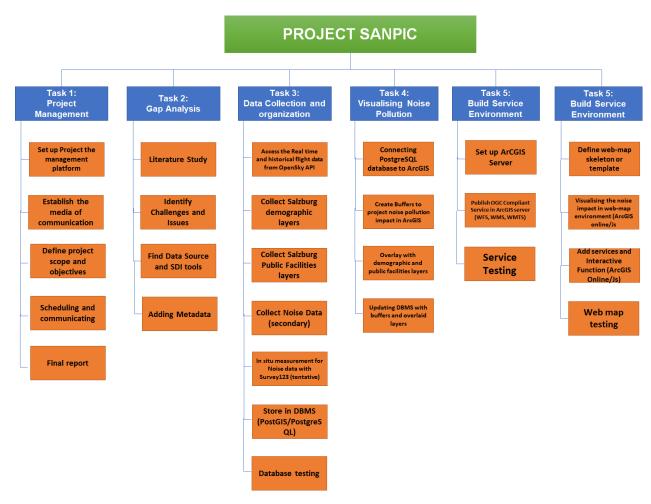

Figure 1 Work breakdown Structure

Detailed work plan <<STEPH>>

Please document the goals,content and expected results for each work package. Provide information on the planned approach and methods you want to apply as well as the expected results (including the planned milestones and deliverables). As a first work packet please use 'project management'. (SEE NEXT PAGE)

WP 1	Project management	01.05.2020 – 24.06.2020

Project Lead	Project team
Stephanie Tumampos	Rochamukti Rizacanofana

Objectives

- To establish the project overview
- To create a project workflow, structure and timeframe (Gantt chart)
- To establish work packages and assign work roles
- To determine costs and equipment
- To learn project risks and mitigating factors

Content & Tasks

The Project Head will setup the following for the Project Management:

- Project Information
- Project Content and Project Goals
- Work Breakdown Structure
- Work Plan
- Milestone Plan

The Project Team will determine the following for the Project Management:

- Frame of the Project
- Resources and Budget
- Gantt Chart
- Risk Matrix

Both the Head and Team will work and collaborate on the work packages and determine establish the goals of each work package and their timelines. They will also take turns in shifting all their plans to Gitlab platform.

Expected results

The expected results of the Project Management Work Package 1 are the following:

- Clear and concise project information, content, goals and risks
- Defined work breakdown structure and work packages
- Detailed work plan and milestone plan, including roles of each member of the team
- Visualized schedule through a thoroughly mapped Gantt chart
- Overview of resources and budget are well put out and explained to avoid over or underspending

Milestones & Deliverables

M1 - Completed Project Overview
D1 - Document file of Project Overview
D2 - Gitlab repository
D3 - Final Report and Final Presentation

WP 2	Gap Analysis	03.05.2020 – 11.05.2020
Project Lead		**Project team**
Stephanie Tumampos		Rochamukti Rizacanofana

Objectives

- To identify the challenges that will be faced in the progress of the project
- To find data sources
- To gather literature and studies

Content & Tasks

The Project Head will setup the following for Gap Analysis:

- Literature Study
- Adding Metadata

The Project Team will determine the following for the Gap Analysis:

- Identifying the challenges and issues
- Finding the data sources and tools to be used

Expected results

The expected results of the Gap Analysis Work Package 2 are the following:

- Review of Related Literature
- A list of the challenges and issues that will be faced
- A list of solutions that can be used to resolve challenges and issues
- A list of all possible data sources and tools to be used

Milestones & Deliverables

M2 - Completed Gap Analysis

D4 - A document that can show the list of the challenges and issues, and their possible solutions

D5 - A document with a list of data sources and tools to be used

WP 3	Data Collection and Organization	11.05.2020 – 26.05.2020

Project Lead	Project team
Stephanie Tumampos	Rochamukti Rizacanofana

Objectives

- To establish data collection and structure
- To determine the validity of data
- To collect in-situ measurements of aircraft noise in Salzburg Airport
- To store data in a database management system
- To compile other data such as layers from sources

Content & Tasks

The Project Head will setup the following for the Data Collection and Organization:

- Collect Salzburg Demographic Layers
- Collect Salzburg Public Facilities Layers
- Collect Noise Data
- Database Testing (including Debugging steps)

The Project Team will determine the following for the Data Collection and Organization:

- Access the Real time and Historical Flights
- Store in a database management system
- In-situ measurement for Noise Data

Expected results

The expected results of the Data Collection and Organization Package 3 are the following:

- Established access of real time and historical flight data from data source
- Acquisition of Salzburg demographic and public facilities layers
- Collection of Noise data in-situ measurements
- Created a database management system
- Testing and validation of data and database is done

Milestones & Deliverables

M3 - Completed collection of Data and Validation

M4 - Database Established

WP 4	Visualizing Noise Pollution	27.05.2020 – 09.06.2020

Project Lead	Project team
Stephanie Tumampos	Rochamukti Rizacanofana

Objectives

- To connect the database and create buffers to project noise pollution impact in ArcGIS PRO
- To incorporate Salzburg city layers in the visualization
- To update database

Content & Tasks

The Project Head will setup the following for the Project Management:

- Connect PostgreSQL Database to ArcGIS PRO
- Create buffers to project noise pollution impact in ArcGIS

The Project Team will determine the following for the Project Management:

- Overlay demographic and public facilities layer of Salzburg
- Update the database management system with the buffers and overlaid layers

Expected results

The expected results of the Visualizing Noise Pollution are the following:

- Established connection of the Database to ArcGIS Pro
- Created the needed buffers to project noise pollution
- Visualized and integrated the layers from Salzburg city data (demographic and public facilities)
- Successfully updated DBMS and added layers
- Visualized Noise Impact

Milestones & Deliverables

M5 - Completed code work for noise visualization, addition of Layers, impact analysis,

D6 - Updated Work Plan

D7 - Update Documentation

WP 5	Build Service Environment	10.06.2020 – 16.06.2020

Project Lead	Project team
Stephanie Tumampos	Rochamukti Rizacanofana

Objectives

- To set-up the ArcGIS server
- To publish service in ArcGIS server
- To test the service

Content & Tasks

The Project Head will setup the following for the Project Management:

- Service Testing (including Debugging steps)

The Project Team will determine the following for the Project Management:

- Setup the ArcGIS server
- Publish service in the ArcGIS server

Expected results

The expected results of the Visualizing Noise Pollution are the following:

- Successful set-up and publishing of the service in the ArcGIS server
- Testing of service is completed
- Service is published

Milestones & Deliverables

M6 - Server is published and tested

WP 6	Build Web Map	10.06.2020 – 16.06.2020
Project Lead		**Project team**
Stephanie Tumampos		Rochamukti Rizacanofana

Objectives

- To define a webmap template
- To visualize the noise impact in a webmap environment
- To establish interactive functions in the webmap
- To publish and test the SANPIC webmap app
- To release and present SANPIC webmap app

Content & Tasks

The Project Head will setup the following for the Project Management:

- Visualize the noise impact in a webmap environment
- Webmap testing (including Debugging steps)

The Project Team will determine the following for the Project Management:

- Define the webmap skeleton or template
- Add interactive function (edit, share, find location)

Expected results

The expected results of the Visualizing Noise Pollution are the following:

- Visualization of noise impact in a webmap environment
- Establish interactive functions of the webmap app
- SANPIC webmap app tested
- Release of SANPIC webmap app

Milestones & Deliverables

M7 - SANPIC Webmap App is published, tested and released

D8 - SANPIC Webmap App

D9 - Final Documentation

D10 - Final Presentation

Milestone plan

Please provide a summary of the planned milestones and provide an according overview graphic.

	Name	Date Completion
M1	Completed Project Overview	May 5, 2020
M2	Completed Gap Analysis (Literature study, issues, tools to be used)	May 11, 2020
M3	Completed collection of Data and Validation	May 24, 2020
M4	Database established	May 26, 2020
M5	Completed code work for noise visualization, addition of Layers, impact analysis	June 9, 2020
M6	Server is published and tested	June 16, 2020
M7	SANPIC Webmap App is published, tested and released	June 22, 2020
M8	Presented to Evaluators/ Project End	June 23, 2020

Figure 2 Milestones

Gantt Chart

Please provide an image of your Gantt Chart as overview graphics. Please attach the Gantt chart and it's monthly updates in addition to this document.
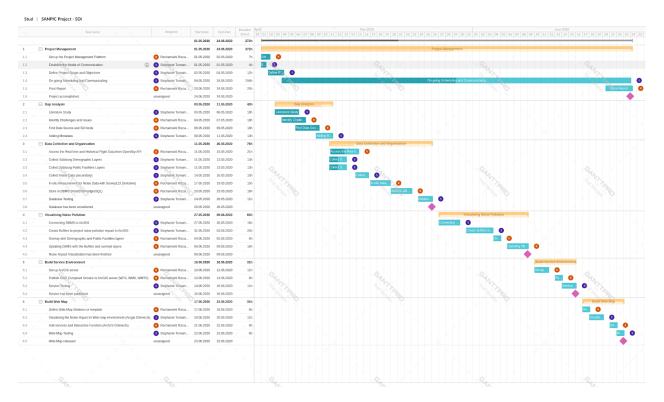

Figure 3 Gantt Chart

Risk matrix

In this table, please provide the important risk information. Please categorize the risks accordingly. ([L]ow, [M]edium, [H]igh], [C]leared)as well as your mitigation strategy. Please update this list accordingly during your project execution time frame.

	Risk	Mitigation Strategy	Type	Update
1	Data unavailability	- Maintaining communication with the data provider(s), sending formal request if necessary - Obtaining the data not only from single source	H	05.05.2020
2	Hardware limitation and network connection problem	- Identify the system and hardware requirement of each software - Work in cloud environment - Backup the data	M	05.05.2020
3	Unsolved Bugs	Carry out testing and debugging constantly after finishing the development phase.	H	05.05.2020

Additional comments

Add additional comments if necessary.

Comments

Approval

Please provide further information if necessary.

Freigabe

Approval: Date: 17.05.2020

_____   _____
Signature principal investigator   Signature project lead/contractor

Attachments

Attachment 1: Gantt Chart (monthly updated).