Development of an application to track people in locations without internet access

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Plan

1. Introduction (goal and objectives)
2. Functional requirements
3. Creation of the concept
4. Result
5. Conclusion
6. Reference list

About Irkutsk Oil Company

- Engaged in geological study, exploration and development of oil subsoil and afterwards in the production of hydrocarbons itself;
- 9,000 employees (2021);
- A partner of INRTU;
- The territory consists of the Irkutsk region, the Republic of Sakha (Yakutia), Krasnoyarsk Krai and other.

ИРКУТСКАЯ НЕФТЯНАЯ КОМПАНИЯ

Problem

Investors and engineers are unable to get geopositions when come to the fields:

- No mobile communications or internet;
- People are not always able to describe their location over the radio as they do not know the terrain;
- Investors often move away from the group and may get lost;
- It is difficult to help engineers during works.

Goal and objectives

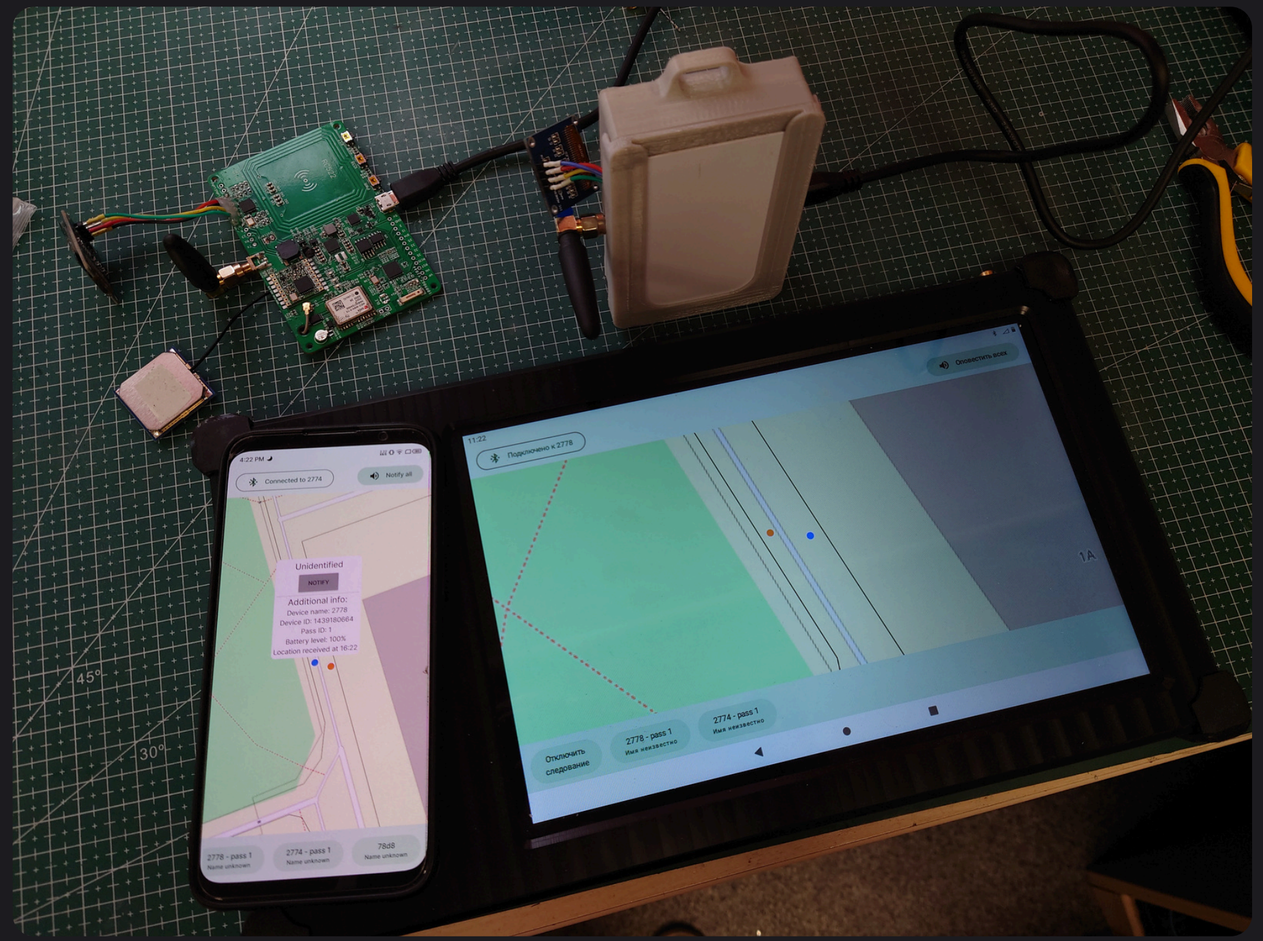
Goal: Create an application to track people in locations without internet access in order to reduce the complexity and cost of the people support process.

Objectives:

1. Identify the main features of the application;
2. Analyze the technologies required for implementation;
3. Develop requests to other parts of the system;
4. Implement the application.

Solution

Hardware (tracking and transmitting badges; tablet PC) and software (application) system that displays investors and personnel on a map and allows to alert them when needed



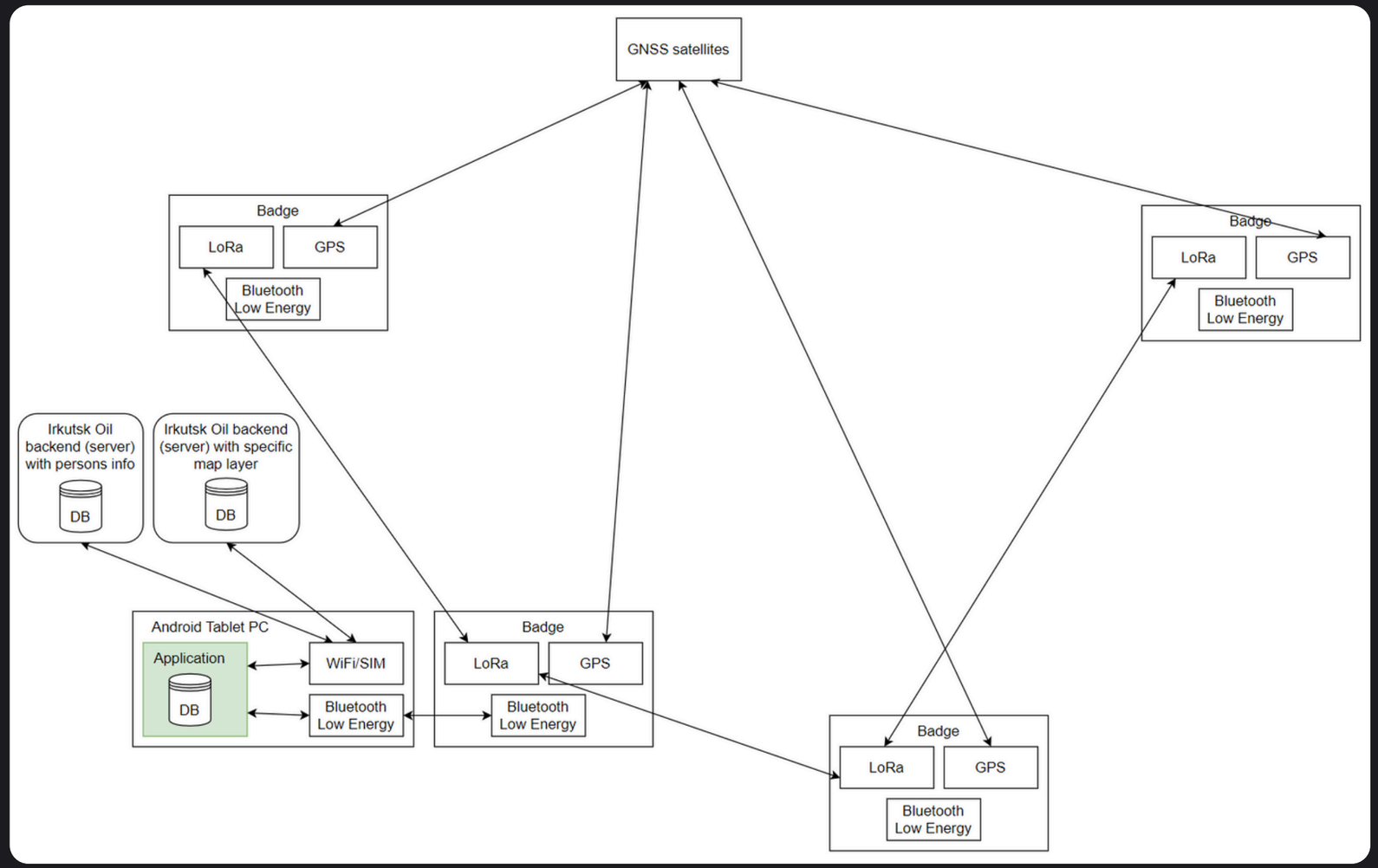
development

App should be able to

- Show people on a map with their name and organisation;
- Notify specific or all people of turning on their radios;
- Get locations from badges via Bluetooth Low Energy;
- Get personal info (name, organisation) from Irkutsk Oil backend;
- Get specific map layer (layout and location of Irkutsk Oil constructions) from Irkutsk Oil backend.

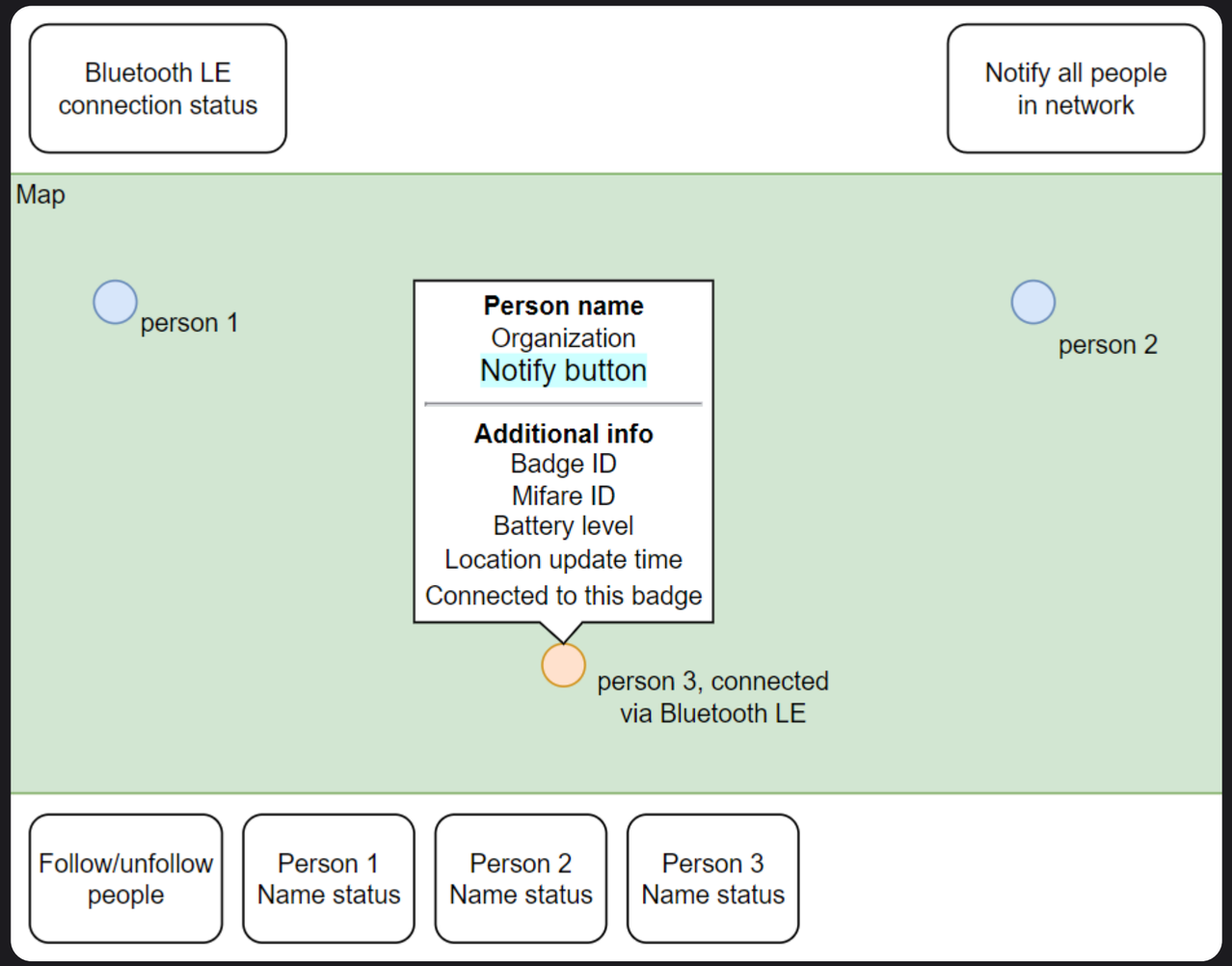
development

Data transfer concept



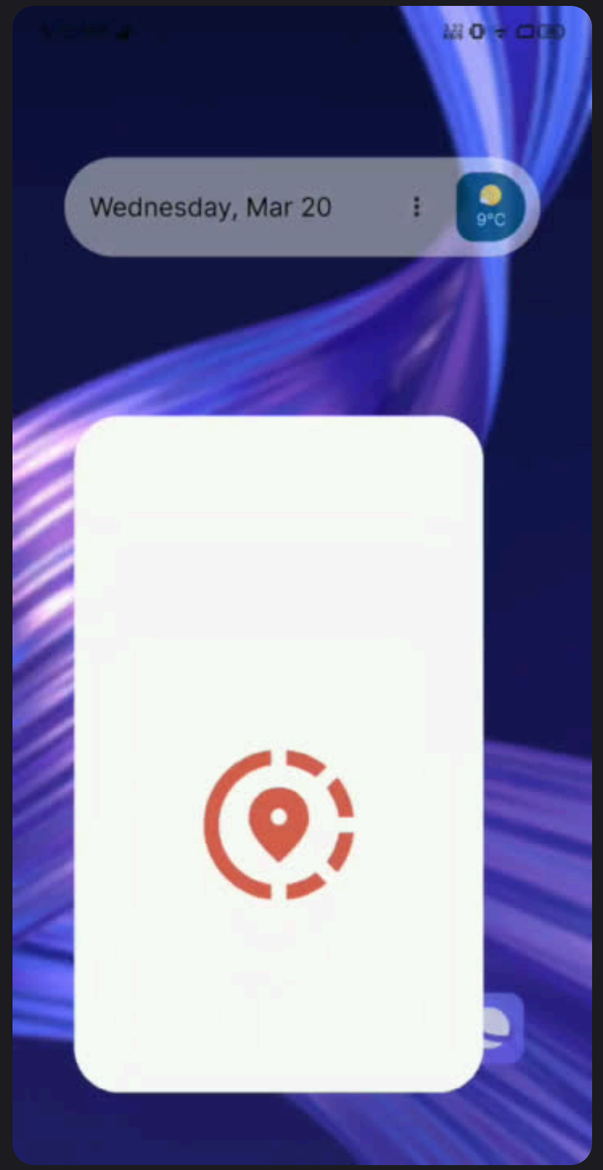
development

User interface concept



Result

- The main features and required technologies for the application have been identified;
- The requests to other parts of the system have been developed;
- The application has been implemented.



results

Conclusion

- Established application has been shown successfully to the company and accepted for further development;
- Currently the hardware and software system is being tested in urban conditions;
- After assembling a large number of badges, the project will be integrated into Irkutsk Oil Company.

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Thank you for listening

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