



SIRIUS  
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TERRITORY



Sirius  
Educational Center



Sirius  
University of Science  
and Technology



November 28-29, 2025

# YOUNG SCIENTISTS HACKATHON

2025



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# CASE - 3

# Background

The Sirius federal territory is a venue for scientific conferences, educational programmes, and sports competitions. Each event concludes with summarising results and presenting diplomas, certificates, and letters of appreciation. Many guests return to the Sirius federal territory, and information about them accumulates in local databases. There is a need to automate the routine tasks of creating reporting documents.



# About the case

└ Sirius GlobalCertHub:  
Certificate Generation Service ┘

**Goal:** To develop a service that imports a list of participants from a CSV (XLSX) file and generates digital certificates for participants of educational programmes, scientific conferences, and sporting events.

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# Core Functional Requirements

1. Provide a mechanism for uploading participant personal data in .CSV (minimum) or .XLSX (desirable) format.

List of fields: Full name, email, role (participant, speaker, winner, prize-winner), place (1/2/3).

2. Provide users with an interface for adding and selecting graphical certificate templates.

Possible template formats: SVN or HTML+CSS with placeholders.

Some fields may relate not to a specific user, but to the generated certificate: issue\_date, event\_name, certificate\_id.

3. Generation of a certificate specifying personal data (PDF file).

4\*. Implement service integration with email for the automatic distribution of generated certificates to participants.

5.\* Data storage security and information confidentiality.

# Work Plan

## Checkpoint 1: Certificate Rendering

Goal: Ensure the template-to-PDF generation pipeline works.

Expected Outcome:

- ★ A script generates a PDF from the command line.
- ★ At least one placeholder is successfully substituted.
- ★ Correct display of Cyrillic characters and Russian fonts.

## Checkpoint 2: UI + CSV Import + Single/Several Certificate(s) Generation

Goal: Connect data input to the template via a simple interface.

Expected Outcome:

- ★ Ability to upload a template and a valid CSV/XLSX file.
- ★ The system generates a populated document from the data.

## Checkpoint 3: Email Integration + UI Polishing + Docker

Goal: Create a production-ready certificate issuance system.

Outcome:

- ★ User-friendly UI for data entry.
- ★ Batch PDF generation (e.g., in a ZIP archive).
- ★ Optional email delivery.
- ★ User authentication (login/password).