

# IDENTIFICATION OF POTENTIAL TERRITORIAL BENEFITS

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FCC WEEK 2024

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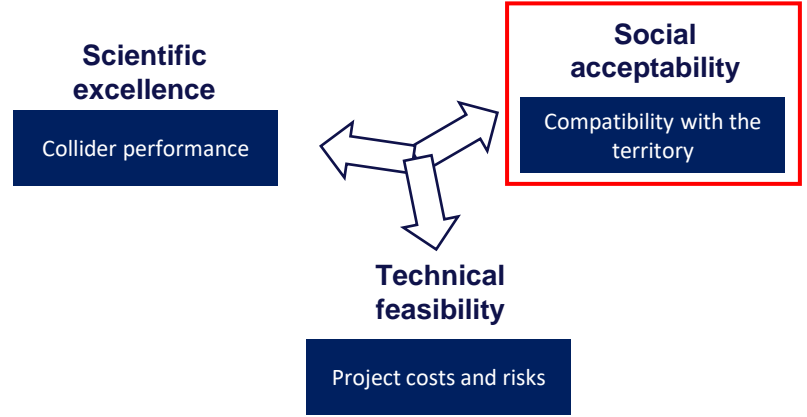
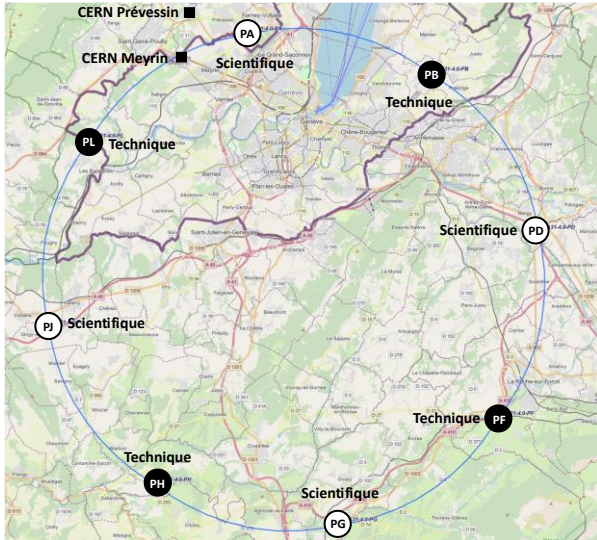


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# FCC geographical context & key principles

## Geographical context:

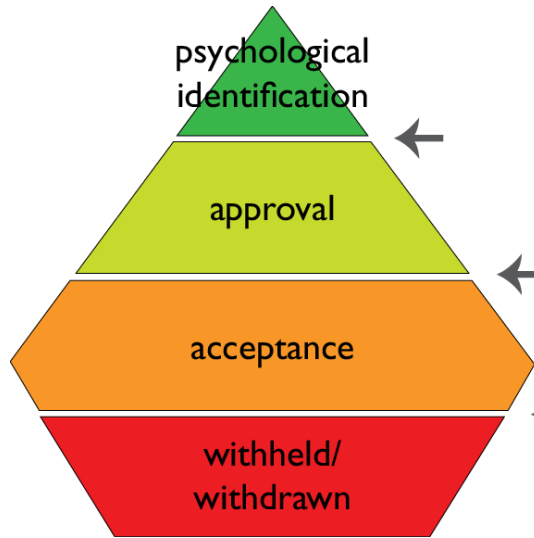
- 2 countries
- 1 region
- 1 canton
- 2 French departments (including a new territory)
- 9 EPCI (Public Establishments of Intercommunal Cooperation)
- 41 communes



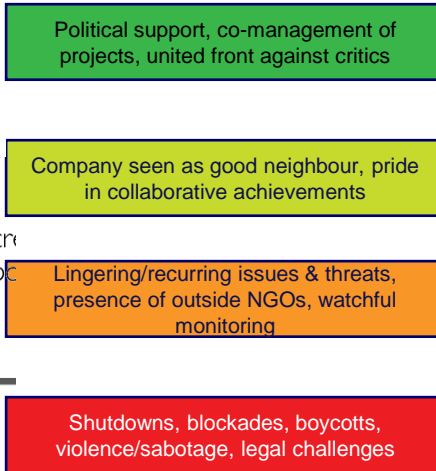
# Social acceptability

## The Social License to Operate:

Measuring the social license



Symptoms/indicators



## Discussions/work with various local stakeholders:

- Understand the expectations
- Identify the benefits/opportunities
- Create synergies
- Non exhaustive list:
  - Representatives of the communes
  - Haute-Savoie Departmental Council
  - ADEME
  - SIG
  - OCEN
  - SRB
  - ENEDIS

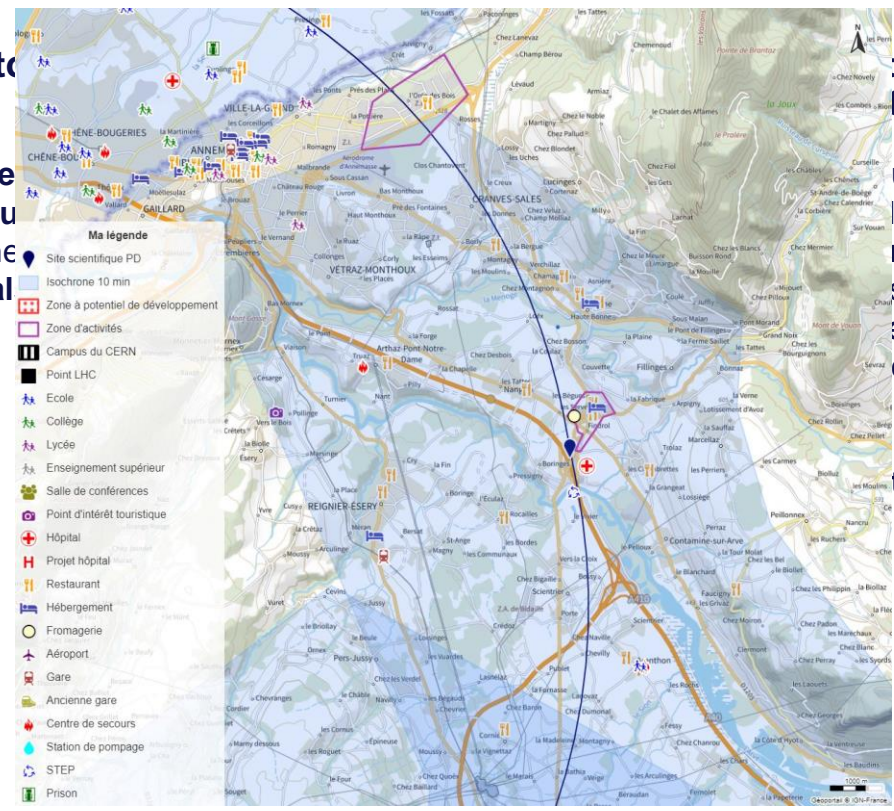
→ Sustainable territorial integration of the research infrastructure



# Exemplary territorial benefit potentials

## 1. Directly linked to infrastructure:

- Supply of waste heat
- Re-use & redistribution
- Reinforcement of the
- Excavated material



to the presence of the infrastructure:

- Tourism
- Local services
- Transport infrastructure
- High quality education and training
- Emergency services
- Local companies
- Activity pole\*\*

\* Waste heat supply opportunities : 9:10 - Alain Guiavarch – Ginger Bugeap

\*\* Results of the pole analysis study : 9:30 – Leslie Alix – CERN/CNRS

# Excavated materials reuse

## Separation of materials for different reuses:

- From sterile to fertile material with the OpenSky Lab\*
- Renaturation/forestry
- Landscaping
- **Concrete production:**

## Composition of the **molasse**\*:

- 36 to 48% clay particles which may be used to produce low carbon cement
- 10 to 15% of silt particles which could be used as filler complement for coarse sands
- 10 to 15% of sand particles from 63  $\mu\text{m}$  to 4 mm that can be separated and blended to produce specific sands as concrete sand, coating sand, filtration sand, etc.
- 15 to 20% of particles over 4 mm which could be crushed to produce coarse sand.

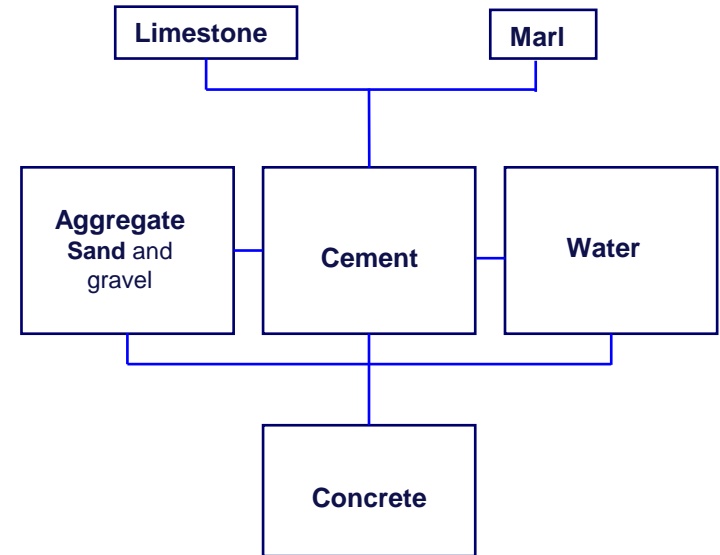
**Detailed subsurface investigations are needed for the planning of the reuse opportunities**



Limestone



Marl



\* 10:50 : The OpenSky Lab for innovating excavation materials re-use - Christiana Staudinger - BOKU

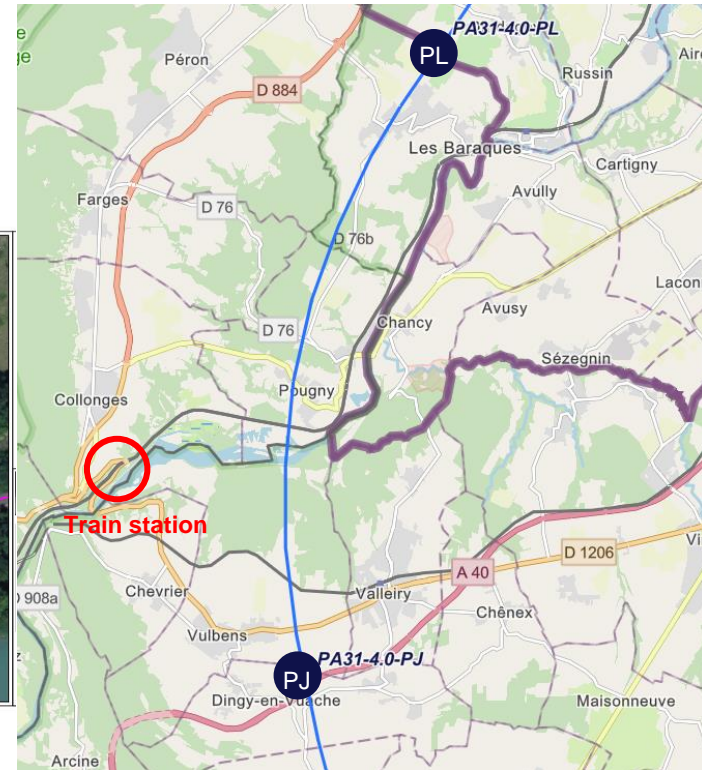
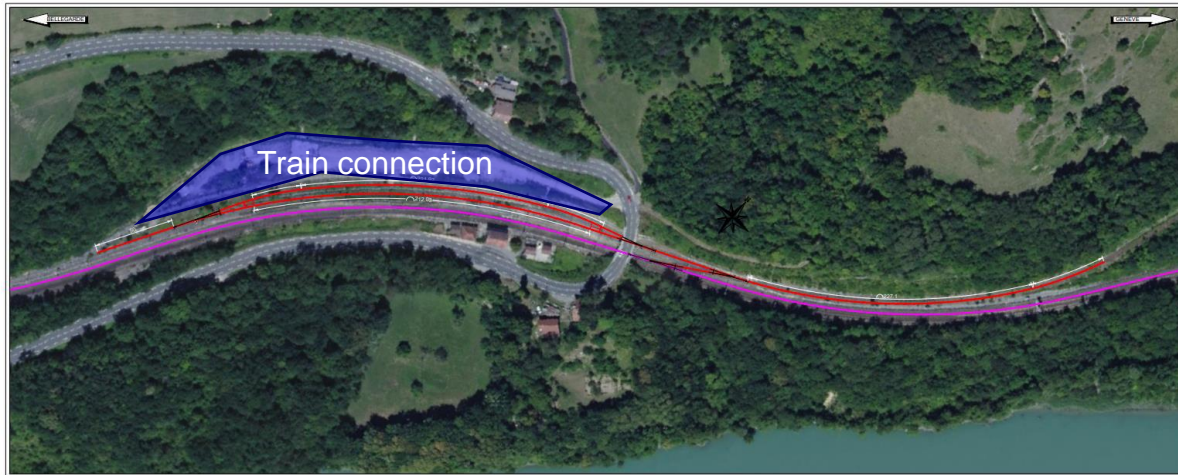
\*\*BG Ingénieurs Conseils SA – Proposal for Mining the future competition



# Enhancement of transport infrastructure

## Potential synergy with the closed train station in Collonges:

- For evacuation of excavated materials and or supply of materials
  - Closed train station: Lyon <> Geneva line
  - Synergy with Grand Geneve project
  - Serves also non-FCC needs
  - Study performed by EGIS, expert in train connections
- Achievable with moderate adjustments or efforts



# Potential new water intake

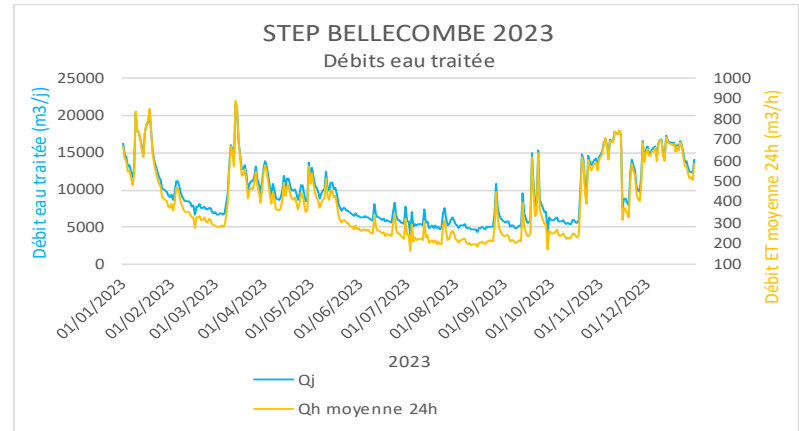
## Water needs for cooling purposes:

- Total water needs: 3 million m<sup>3</sup>/y, on average 650 m<sup>3</sup>/h during operation phase only (Geneva Lake)
- PD, PF and PG water needs: 130 to 200 m<sup>3</sup>/h on average



## Synergy potential:

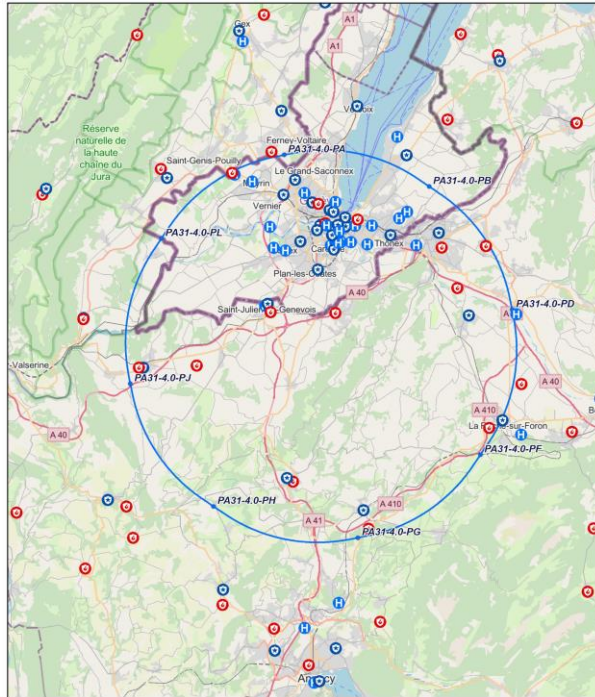
- STEP water flow: 400 m<sup>3</sup>/h on average  
→ Physico-chemical analysis: pre-treatment required due to amount of dissolved CaCo<sub>3</sub> (TDS)  
Dedicated study is engaged  
→ Microbiological analysis: ongoing



- Reusing it for FCC cooling purposes and other applications
- FCC wastewater treatment plant potentially located in this STEP

# Strengthening of emergency services

Services de secours et d'urgence



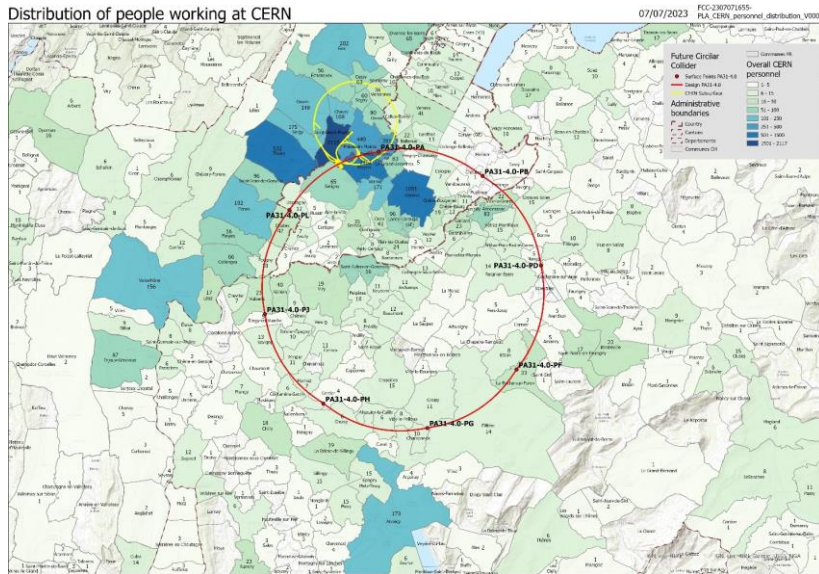
- **Collaboration with territorial emergency services is the baseline scenario and is on the top priority list of the Host States**
- **Fire brigades in the immediate vicinity of all surface sites (5-10min)**
- **Assure highest level of competency and top equipment:**
  - Mutual intervention possibility
  - Common training/Skills and knowledge sharing
  - Equipment sharing
- **Current situation:**
  - Tripartite agreement between the Host States and CERN
  - Collaboration agreement between HUG and CERN
  - FCC would further enlarge the existing agreements for the benefit of all parties

08/03/2024  
 1:332,483  
 Citations 0 2 4 6 8 12 km  
 Security and emergency services: Design  
 Hôpital ou clinique PA31-4.0  
 Incendie et secours World Imagery  
 Police World Imagery  
 Surface Point Low Resolution 15m Imagery  
 PA31-4.0 High Resolution 60cm Imagery  
 High Resolution 30cm Imagery  
 Earthstar Geographics, Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri, Comnavi Maps contributors, Map layer by Esri, Multiple sources - Processed by CERN

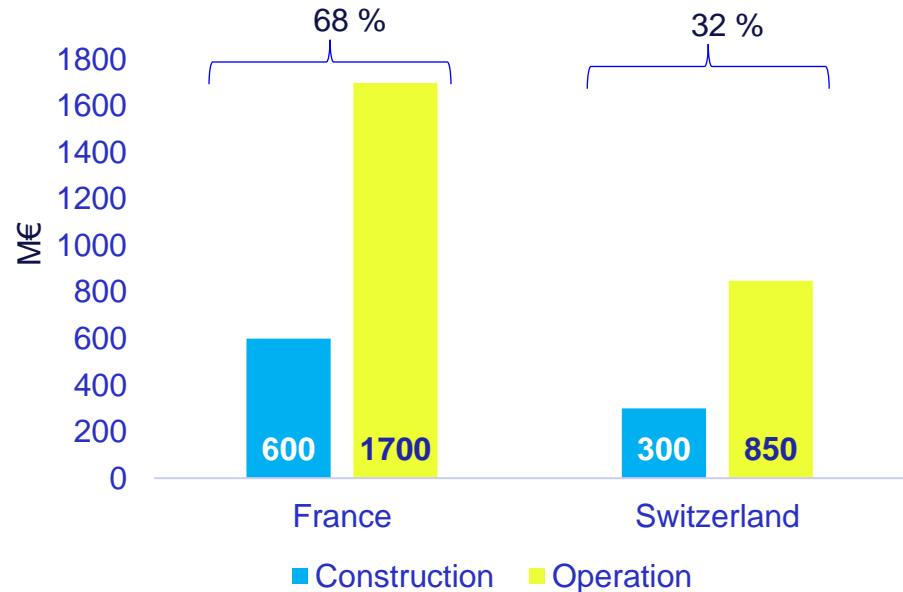


# Economic effect of concentrating people around a research infrastructure: consumer spending

Almost 9000 people residing in the territory.

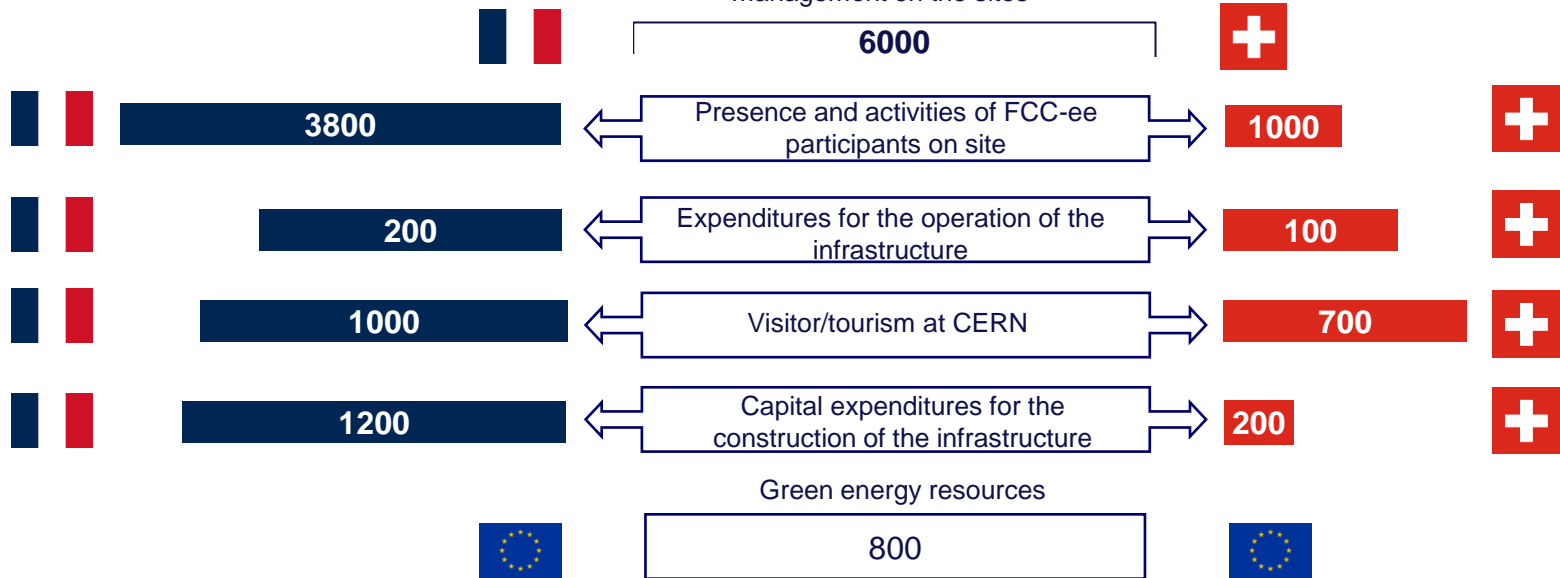


4.4 billion € could be spent in consumer spending over 30 years (of which 3.4 billion € directly linked to the FCC-ee programme).



# Economic effect of a research infrastructure: direct, indirect and induced jobs

Project in the fields of science, engineering, administration and management on the sites



In total, **14200 jobs on average per year in the Host States**, including around **2200 jobs at a territorial level** (Ain, Haute-Savoie, Canton de Genève).

Courtesy: G. Streicher

# Economic impact of tourism: continued monitoring

## 1. Tourism at CERN:

- Previous annual visitors: 150 000/y before the opening of Science Gateway
  - Total visitor expenses amount to 4 billion over 30 years
- New estimates after Science Gateway operation starts: over 300 000 visitors annually.

Courtesy: I. Crespo

## 2. Setup of systematic and continued monitoring

- Economic survey in the Science Gateway
- Inquiries about visitor profiles, country of origin, and expenditures within the region
- Started on Monday 10, June

## 3. Objective of the survey:

1. Know better the direct economic impacts
2. Estimate better the FCC impacts
3. **Estimate visitor center impacts in Haute-Savoie at PD, PG, PJ**



# Development of a sustainable scientific tourism

## 1. Development of tourism at a scientific site:

- Exhibition
- Control room access
- Detector access
- Catering facilities, a shop selling souvenirs and other products
- Conference room



## 2. Development of tourism in the region:

- Possibility of creating scientific itineraries:
- Scientific research centers in the region:
  - CERN, CNRS, INRAE, CEA (e.g. Les Rencontres Terra Scientifica and participatory scientific tourism).
- Strong cultural and economic identity of the territory linked to agriculture and cheese-making:
  - Route des Fromages de Savoie (Cheese-makers, educational farms, mountain pastures)



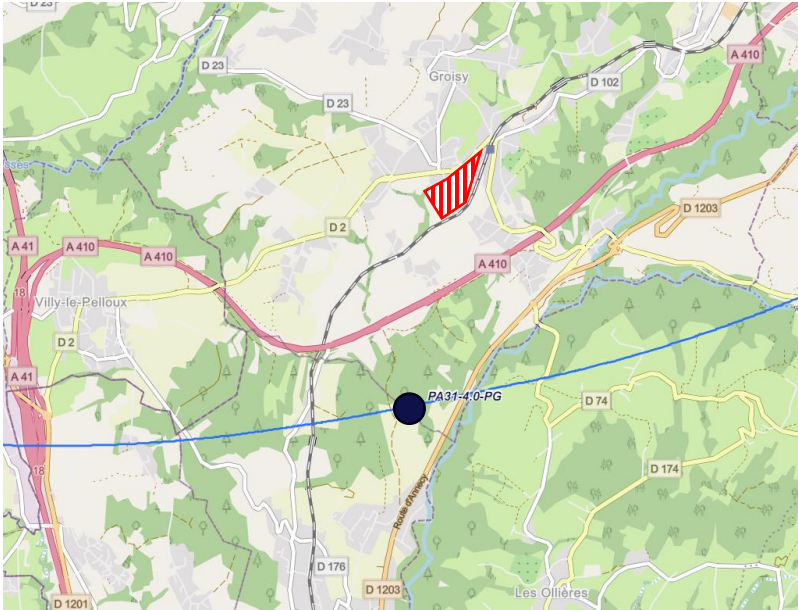
# Conclusions

- Real many and varied potential benefits
- Potential benefits identification was done, needs further investigation
- Most of the developments will not and cannot be carried out directly by CERN, but by local stakeholders
- Sustainable territorial benefits are crucial to ensure the social licence to operate and public support



Thank you  
for your attention.

# Example: Visitor and activity centre at PG



## Context

- Development of the train station area (3,5 ha available),
- Presence of two secondary schools,
- Campus de Groisy (vocational school),
- Few local services (accommodation/catering),
- No tourist activities.

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## Potential development

- Creation of a cultural scientific centre,
- Creation of buildings and offices for scientists and service providers,
- Market gardening or another agricultural activity (using FCC heat),
- Development of a range of accommodation and catering services linked to the site.