hello, I am Jeremy Andres; I work as a database engineer at the university of Franche-Comté.

As you may have guessed, I’m here to introduce the JURAD-BAT project. This INTERREG project is led by the University of Franche-Comté and the School of Engineering and Architecture of Fribourg, in Switzerland.

The general aim is to improve understanding radon risk and indoor air quality in general on the Jurassic Arc between France and Switzerland.

A more precise objective is to develop a web platform for different audiences: general public, territorial collectivity, or experts.

They will have access to a great variety of information specific training, data sheet, etc.

To give view a better understanding of the project, you need to understand how it started and the inherent risks linked to a poor air quality.
It all began in Franche-Comté. Many people as doctors,

« If someone wishes for good health, one must first ask oneself if he is ready to do away with the reasons for his illness. Only then is it possible to help him. »

Hippocrate (460 – 370 BC)

« Study is the ornament and luster of a man. She gives a wonderful shine to her qualities. »

Axel Oxenstiern (1652)
safety specialist,

territorial collectivity

and association work on radon and air quality
In 2011, it is decided to unite their efforts, resources and information.

It’s the birth of « la démarche pluraliste radon de Franche-Comté » or « the radon pluralist approach of Franche comté ».

It sets out priorities in three main areas:

First, Fieldwork by launching a measurement campaign of radon and other pollutant in housing

Second, Analyses to improve information

« The only source of knowledge is experience. Everything else is just information. »
Albert Einstein (1879-1955)
If it is good to contemplate divine things, it is even better to contemplate and transmit them to others.

Thomas d’Aquin (1224 - 1274)

And third, Dissemination of the knowledge, for example, by collaborating with museums of life science (pavillon des sciences de montbéliard) and the setting up of a website.

The indoor air quality (IAQ) issue is not just a French problem.

For example, the radon is a naturally-occurring radioactive gas that is produced as a decay product of uranium.

Some soils as Granitic ones are radon rich. Indeed, regions like Switzerland or Franche-comté are particularly concerned.

It came naturally to cooperate with
The first collaborations were forged with Federal Office of Public Health (FOPH) and School of Engineering and Architecture of Fribourg. Before the JURAD-BAT project, they have worked together for many years on this issue.
From the beginning, I'm talking about indoor air quality.

We're more used to hear about pollution alerts to fine particules, which is outdoor pollution.

But obviously, outdoor and indoor universe are connected.

But we're hearing few on indoor air pollution. Is the air in your home really healthy? Of course, you don't have to answer right now, but I'll do it for you. Not really, it's not a good air.
So which king of pollution are we talking about? Caution, they are not sort by order of importance and it’s not a complete list.

I will briefly present a few emission sources. They can come from outside air, buildings materials, humans activities, soils, etc.

We find sourcing pollutants like:
- Vehicle (cars, buses, motorcycles, etc.)
- Industry (chemical, high-technology, etc.)
- Natural gas like Radon
- Deodorizers, our friendly pets, dust,
- natural product (incense, candle, essential oils,…)
- dust mites, mould, tabacco, plants, household equipment

Maybe, presenteed like this, it seems to be quite harmful, but if we take a look at the statistics, we quickly change our opinion.

In 2016, according to the WHO, it’s 3.5 Million deaths/year.
For Switzerland, according to the «tribune de Genève» in also 2016, it’s 1 500 deaths/year.
For France, according to the «monitoring centre for indoor air quality» in 2014, it’s 20 000 deaths/year.

Radon can also cause lung cancer between 5 and 12%.
I know! This part of my presentation is not the happiest, but I am coming to the end!

According to monitoring centre for indoor air quality and the ANSES, the socio-economic cost, in a country like France is 20 billion euro/year.
Hopefully, we have ideas to reduce these numbers. It could be interesting to take a look at the energy efficiency race and its consequences. Why?

Quite simple, by insulating more and more building, we are saying to the air: «YOU SHALL NOT PASS!».

Consequences: There is an important increase of some pollutant concentration in the indoor air. We often forget the ventilation system in energy efficiency process.
To achieve this important goals

France and Switzerland get engaged only the better, but not forever and ever

Only for 3 years. 3 very busy years. There is the planning:
The first year 2016/2017: The past year
- we have gathered a lot of existing information and common learning on this subject
- A report on the existing legislation and general practice at national, European and international level has been written.
The second year:
- A Web Application will soon be create
- New measurement campaign of radon and other pollutant in housing has been lauched to complete the existing data.
The third year:
- We’ll continue to developpe the Web Application
• At the same time, we’ll create educational tools on radon and indoor air quality
• We’ll create specific recommendations for professionals and territorial collectivity

So, all marriage has a price tag. This project cost about 1 500 000€ on 3 years.

The main priorities of this project is not new. The current work as « the radon pluralist approach of Franche comté » is based on the following activities.

Fieldwork by launching a measurement campaign of radon and other pollutant in housing

Analyses to improve information
• Dissemination of the knowledge, for example, by collaborating with museums of life science (pavillon des sciences de Montbéliard) and the setting up of a website

but it take it futher!

The aim is to create a common database on indoor air quality.

This library will be enhanced in the future by the project partners upgrades.

We will gather and link informations on locations, building's structure, occupation of the building, pollutants, bringing together, datas from earlier campaigns and new measurements.
The construction of the database is mean to be a very long-term achievement, more than three years. although the web application will be available sooner. In this way, database will be updated and new links will be added on a regular basis, and at the same time, it will be searchable to disseminate the knowledge on the poor air risk.

We’ll be able to improve existing bas maps

To advise building professionals and general public on choices about building materials (iron, concrete, timber, earth, etc.) regarding their positions.

To set up Training Seminars on the radon for the construction industry workers

To inform and advise the territorial authority

To disseminate the knowledge by cultural activities or with educational tools available on the future web platform.
Well, I am talking about web platforms for a while now. I should show you what it will look like. It will be multi support (phone, table, desktop and laptop computer).

It basically operates on this model:

On one side, there is database. It is possible to import and to export data. To protect it, all data are completely anonymised immediately and partners have the exclusive access.

On the other side, the website will granted partners to create map, export data in Excel and CSV format, make statistic, etc. It gives also limited access to the data for general public. This way, only non-sensitive data will be available.

the administrator will have authority over it. He will maintain and update the support databases. At last, the administrator freely set up the access level of each user.

The first page presents the available information on the site: home page, pedagogic tools, map, etc we find all of the information we are looking for. Each audience (general public, professionals, partners, territorial authority, researchers) will have its own page featuring.

Partners will have a member login. In the future, It would be very easy to expand this.
The second one presents the project with a map, an abstract and all partners.

The last one is an example of a member page. The partners can make map, statistic, import and export data, manage private data, make indicator, etc.
I think my presentation is complete. I would like to thank all of the partners.

And, of course, thank you for your attention.