

# Development of a thermohygrobarometer with digitalization criteria



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**MWG14**  
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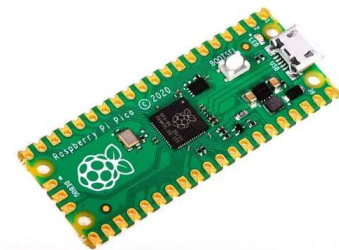
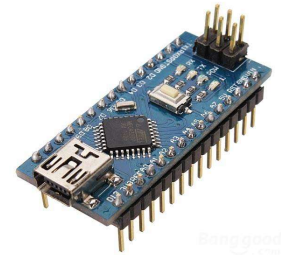


## Project Description

- Development of a system for remote measurement of laboratory environmental conditions (temperature, relative humidity and atmospheric pressure),
  - Including network connectivity for data extraction
  - Remote calibration/verification according to NMI's capabilities

## Project's Goals

- Build capabilities in constructing a low cost IoT thermohygrobarometer
- Design and implement its calibration
- Design and implement the protocol of its Digital Calibration Certificate (collaboration)
- Advance in the sensors' network
- Advance in the scheme of its remote calibration (collaboration)
- Implement agile management principles





## Project's Challenges

- Knowledge appropriation and building capacities in designing and constructing a measuring device from scratch
- Plan the calibration techniques
- Design its measurement adjustment by using the DCC

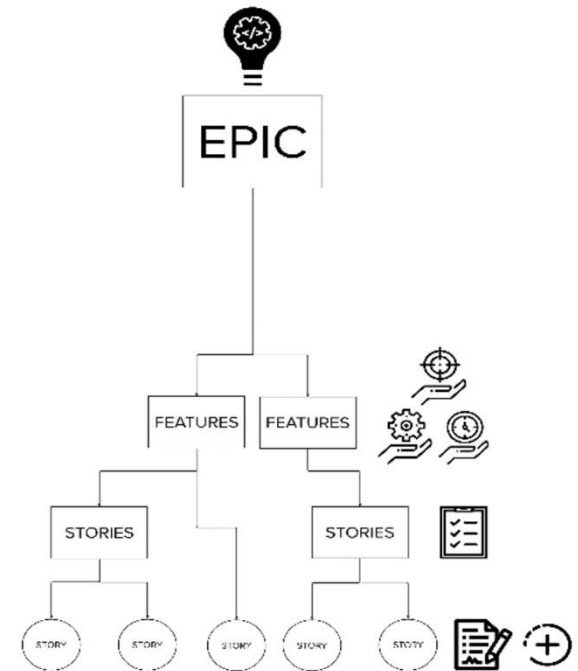
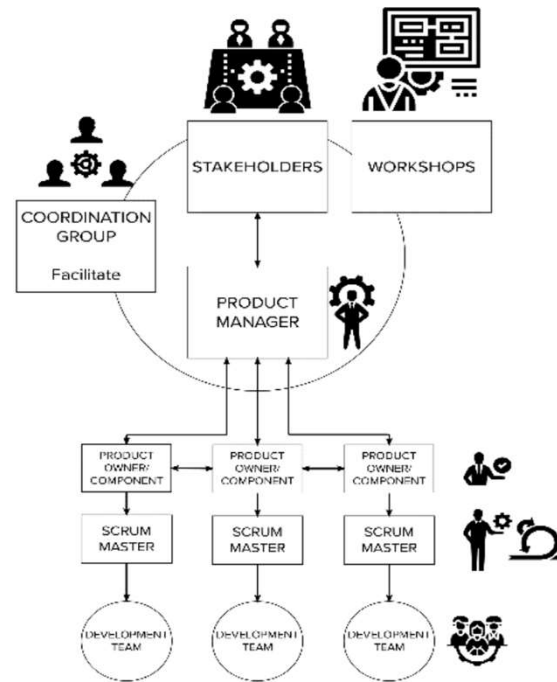


## Project's Relevance

- Wide application of this measurement instrument by NMIs and secondary laboratories
- Establish a first steps to implement a collaborative effort to implement autocalibrating systems such as a sensor network

# Identified opportunity areas

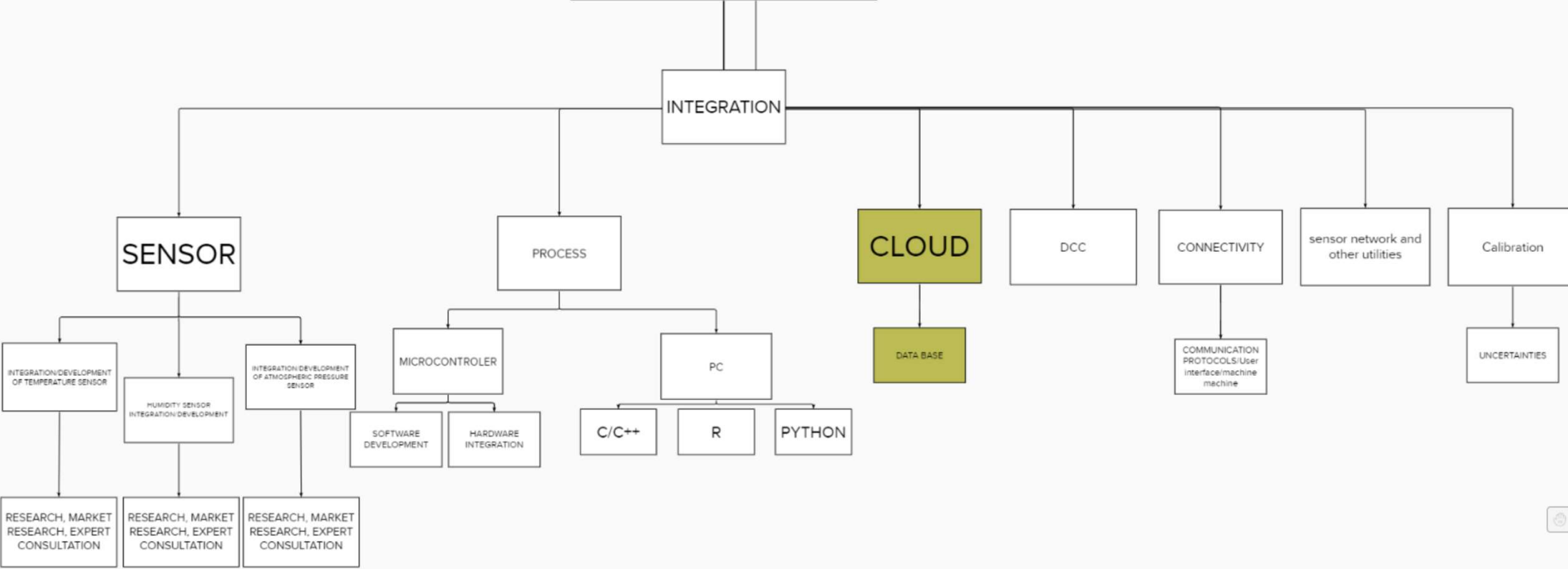
- Active participating stakeholders (collaboration with other SIM-MWG03, SIM-MWG07)
- Team members must provide at least 16 accountable hours per week



# Draft structure of the project

Development of a system for remote measurement of laboratory environmental conditions (temperature, relative humidity and atmospheric pressure), including network connectivity for data extraction and remote calibration / verification as a challenge among NMI's.

|                  |     |                       |        |                                      |                |         |
|------------------|-----|-----------------------|--------|--------------------------------------|----------------|---------|
| NUBE METROLOGICA | DCC | DATOS ADMINISTRATIVOS | CAPA 1 | ESTANDARIZADA                        | ISO            | MUNDIAL |
|                  |     |                       | CAPA 2 | VINCULO                              | NORMAS         | REGION  |
|                  |     | LABORATORIOS          | CAPA 3 | ESQUEMA SUB-INDIVIDUALIZADO CADA NMI | PROCEDIMIENTOS | PAIS    |



## Collaboration with other SIM-MWG

- October 5, meeting with the MWG03 Thermometry to share the Project goals and plan the meeting with other MWGs
  - Aldo Quiroga, Carlos Sánchez + Aldo García, Diego Coppa, Hugo Gasca
- October 25, meeting with the MWG07 Mass and Related quantities (Pressure) and MWG03 Thermometry (Temperature and Relative humidity)
  - Aldo Quiroga, Andrew Todd, Sheila Preste, Carlos Sánchez + Aldo García, Diego Coppa, Hugo Gasca



# Project Participating NMIs

- Argentina
- Peru
- Chile
- Trinidad & Tobago
- Costa Rica
- Ecuador
- Bolivia
- Mexico

