

Development of Clapp's Webapp Presentation

24 July 2024

Introduction

- Overview of the WebApp

Pages

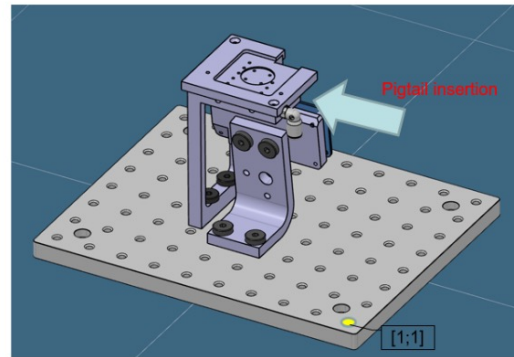
- AppMain
- LAPP Menu
- Position of Tools
- Adjustment and Tools
- Mounting on Cells

Conclusion

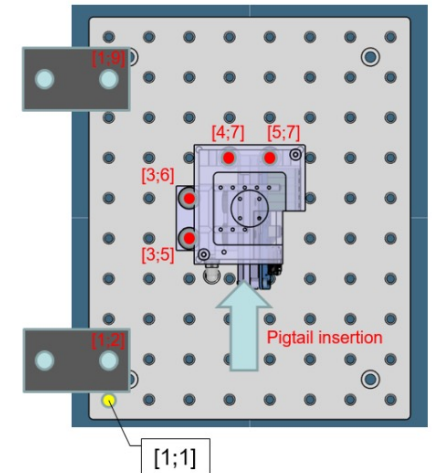
- Summary

Overview of the WebApp

- Pigtail Mounting process description
- PowerPoint reference
- WebApp utilisation

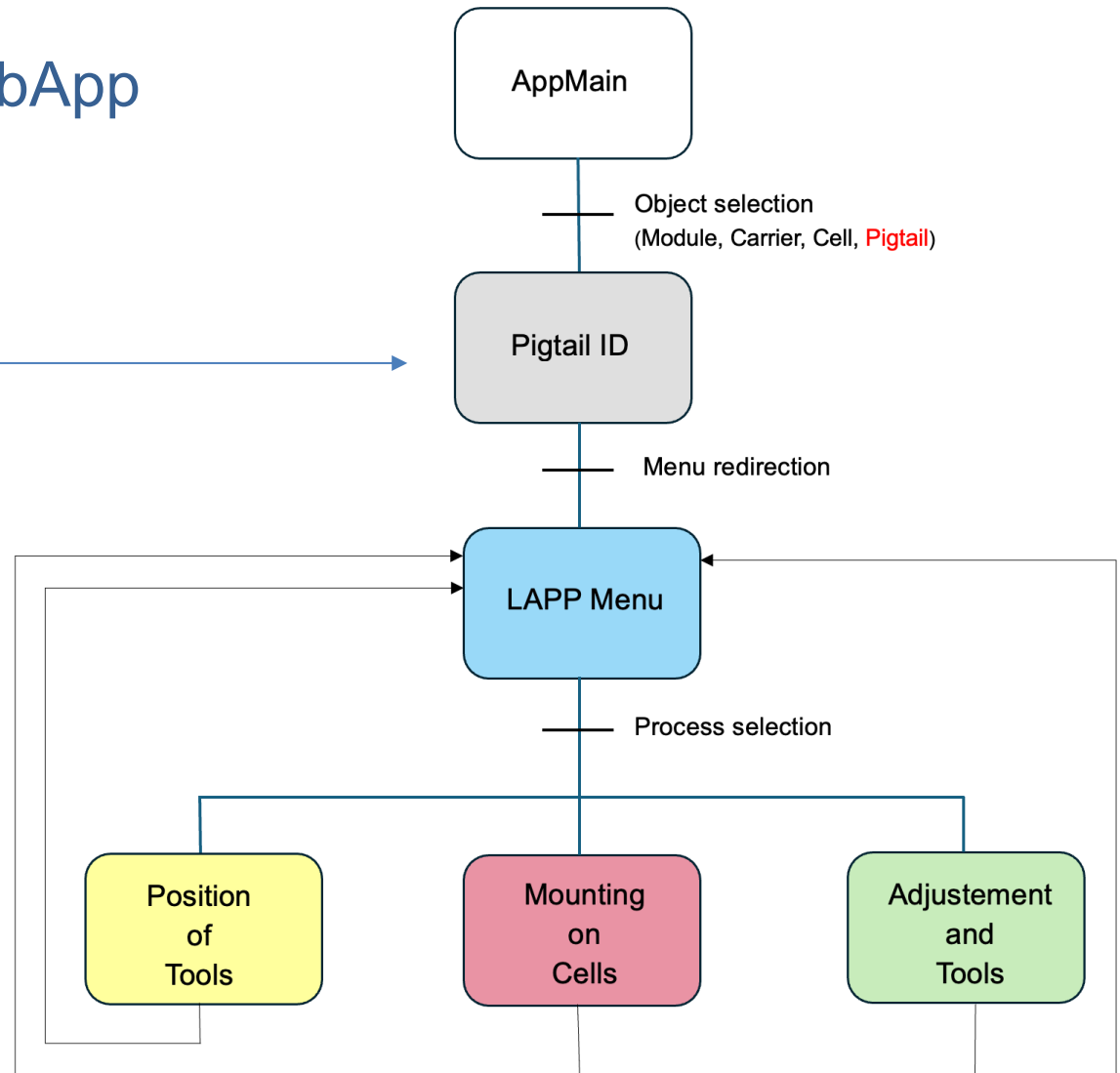


Cell support:
shouldered M6 screws, shoulder 12mm. Location: [4;7] and [5;7]
TOP bracket:
shouldered M6 screws, shoulder 8mm. Location: [3;5] and [3;6]
Hinges (optional):
shouldered M6 screws, shoulder 8mm. Location: [1;2] and [1;9]



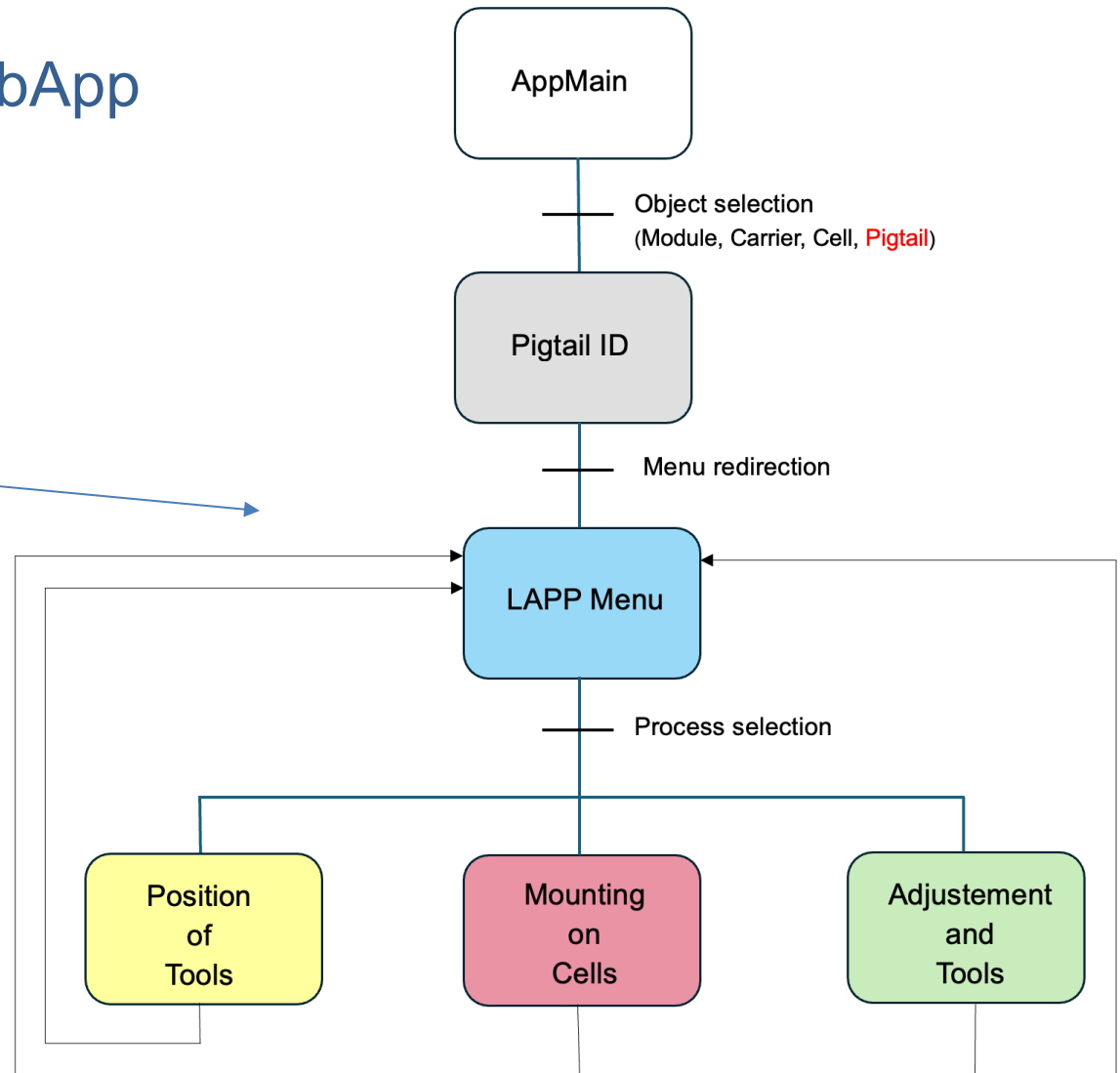
Overview of the WebApp

- Pigtail selection
- LAPP's own Menu



Overview of the WebApp

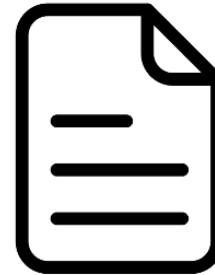
- Pigtail selection
- **LAPP's own Menu**



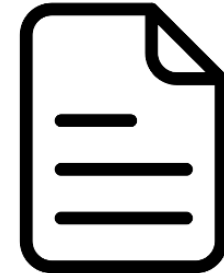
Session states

- Define display logic
- Save informations

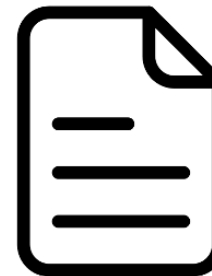
Processus 1



Processus 2



Processus 3



- CLApp main page
- Object selection



Une Application de *Cell Loading*

Connecté à YaLDB.

TEST

Pas de connexion à ITk ProdDB en mode *TEST*

Sur quel composant travaille-t-on ?

- Colle du *Loading*
à enregistrer...
- Module
à coller sur une cellule...
- Carrier
avec un module à coller...
- Cellule
à *loader* avec un module...
- Longeron fonctionnel nu
pour y intégrer des cellules loadées...
- Demi-anneau incliné fonctionnel nu
pour y intégrer des cellules loadées...
- Pigtail
à monter sur une cellule...

- Tests & Development
- Manual selection (4 flavours)



● Pigtail
à monter sur une cellule...

SCAN QR CODE

Choose your Flavour :

Top

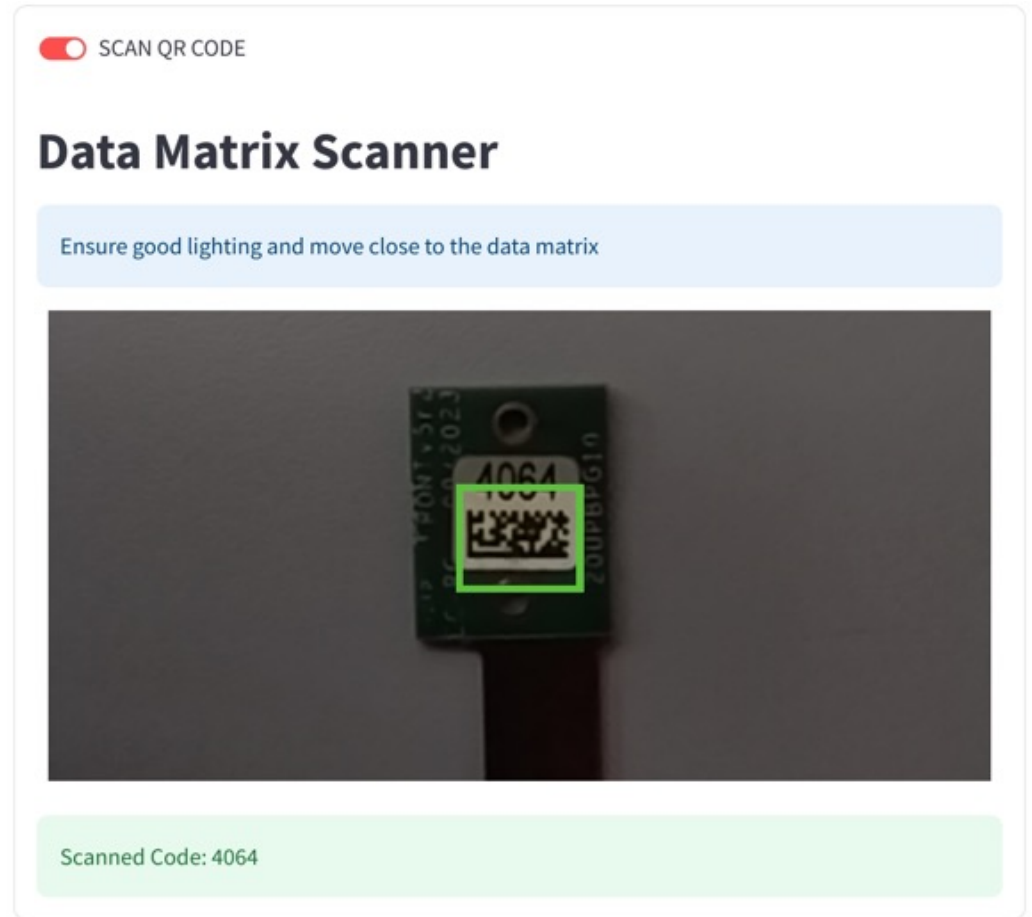
Top

Bottom

Front

Back

- **Datamatrix scan**
- Manual Pigtail ID



- Datamatrix scan
- **Manual Pigtail ID** →



Manual Entry ?

Digits only

OK

- Useful informations

LAPP Application Menu

Operator Name

Your name

Temperature

In degree Celsius

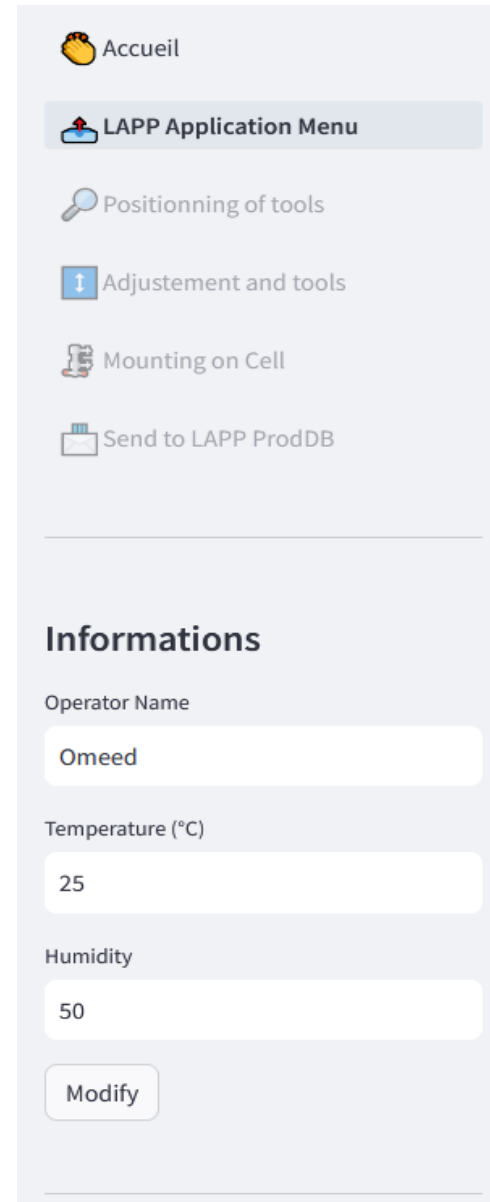
Humidity

In %

Register

- Useful informations

- **Modification with sidebar** →



The screenshot shows the LAPP application interface. At the top, there is a navigation menu with the following items:

- Accueil (Home)
- LAPP Application Menu** (highlighted)
- Positioning of tools
- Adjustement and tools
- Mounting on Cell
- Send to LAPP ProdDB

Below the menu is a section titled "Informations" containing the following fields:

- Operator Name: Omeed
- Temperature (°C): 25
- Humidity: 50
- Modify button

- Useful informations
- Modification with sidebar
- **Process navigation**



LAPP Application Menu

Select an option:

Tools Positioning | ▾

Tools Positioning

Tools Adjustment

Mounting on Cells

- Independent picture

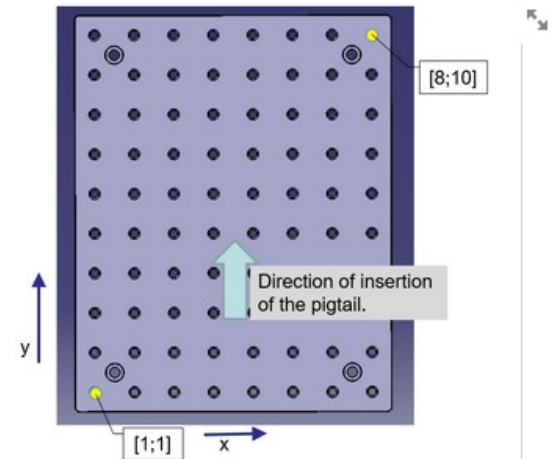
POSITION OF TOOLS

Breadboard

Coordinates on breadboards: locations for the parts are indicated in **x** and **y** from [1;1] to [8;10]. Other tools on optical poles locations will be adjusted with memory forks or painted mark.

The set-ups are presented with the tilting option for interposer use. They are presented as seen by the operator when pigtail is inserted.

The following processes only describe the mechanical mounting, so no tilting option.



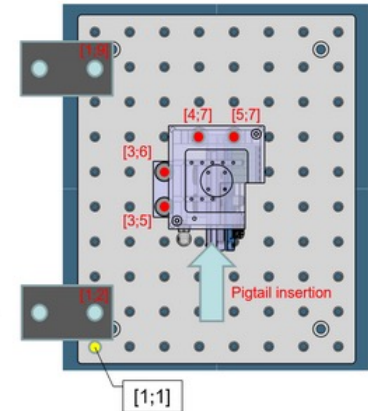
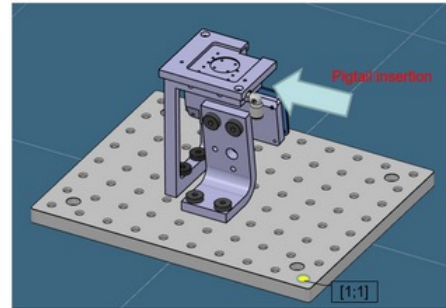
NEXT

Go to LAPP Menu for other processes.

- Independent picture
- Specific display

POSITION OF TOOLS

TOP



Cell support:
shouldered M6 screws, shoulder 12mm. Location: [4;7] and [5;7]
TOP bracket:
shouldered M6 screws, shoulder 8mm. Location: [3;5] and [3;6]
Hinges (optional):
shouldered M6 screws, shoulder 8mm. Location: [1;2] and [1;9]

Breadboard


Picture

Go to LAPP Menu for other processes.

- Independent picture
- Specific display
- 2 images (Schematic, Real)

POSITION OF TOOLS

TOP



Breadboard Schematic


Go to LAPP Menu for other processes.

- **SelectBox**

ADJUSTEMENT AND TOOLS

Please select an option. (Steps are mandatory the first time you use the tool)

Selection :

First adjustment for tools | 

First adjustment for tools

Tools already adjusted

Go to LAPP Menu for other processes.

- SelectBox
- Step by step process

ADJUSTEMENT AND TOOLS

ZIF LOCKING

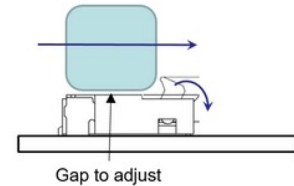
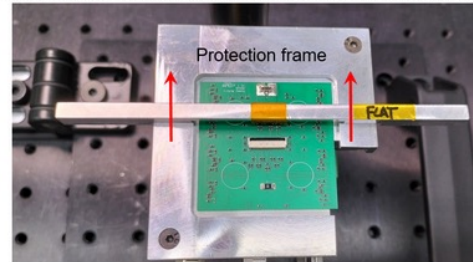
Adjustment for ZIF locking tool: only to be checked/done initially.

Check that the locking tool close correctly the ZIF connector (with a real cell).

The locking tool must close the lever with no pressure on top of the ZIF body.

If needed, adjust the tool by bending it slightly or thanks to kapton tape.

The tool is permanently in contact with the protection frame during the locking process.



Previous

Home

Next

Done

Go to LAPP Menu for other processes.

- SelectBox
- Step by step process



Adjustment Progress

- ZIF Locking
- Strain Relief
- ZIF Insertion V1
- ZRAY Clamp
- CLM Insertion
- CLM Un-mating
- Vacuum System
- ZIF Insertion V2
- Carrier Box

- SelectBox
- Step by step process
- **Free choice**

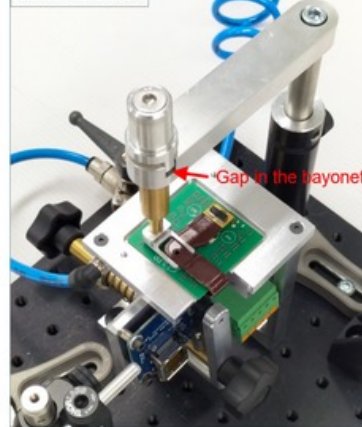


ADJUSTEMENT AND TOOLS

Choice :

Strain Relief

Strain relief tool



Strain relief and « Base for ZIF insertion » tools are mounted on poles that will be put in/removed from pole holders. Holders are initially located thanks to a cell or a dummy cell. Vertical stoppers allow the tool to be at the right height.

- **Strain relief tool:**

Strain relief tool in action must be parallel to the support and the fork must surround the strain relief hole. The weight of the tool is foreseen to maintain the pigtail on the strain relief washer, so the height will be tuned in order to have a slight gap in the « bayonet ».
For inclined set-ups, take care that the fork does not compress the pigtails on the data connector but on the strain relief.
The « bayonet » allows to switch the tool from garage position to active position.

Go to LAPP Menu for other processes.

- Step by step guidance

MOUNTING THE PIGTAIL

BACK

The following description shows pigtail mounting for **Inclined BACK**. The process corresponds to a **MECHANICAL MOUNTING ONLY WITH NO ELECTRICAL TESTS**.

Strain relief implementation is not possible with the bracket and test board in place. Bracket and test board are used only if electrical tests are needed: The set-up is limited to the cell support. Back process doesn't need to tilt the set-up, even for electrical tests.

Check that the ZRAY board flavour is **"BACK"** (Lakmin's board).

Principal steps:

- load the cell on the support & check.
- ZIF insertion.
- ZIF locking.
- remove the ZIF locking tool.
- CLM connection.
- ZRAY clipping.
- strain relief implementation.
- unload the cell and storage.



RETURN

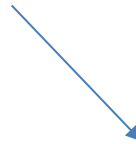
HOME

NEXT

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Go to LAPP Menu for other processes.

- Step by step guidance
- Process anticipation

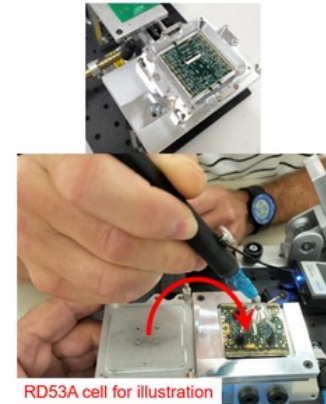
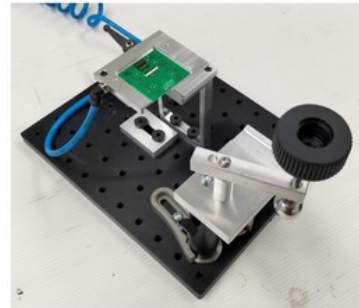


MOUNTING THE PIGTAIL

BACK

Load the cell & check, all tools are removed from holders

- 1- Load the cell thanks 3-pods vacuum tool.
- 2- Switch ON the vacuum for the support.
- 3- Install the "base for ZIF insertion" tool.



- 1-Load the module thanks 3-pods vacuum tool
- 2-Switch ON the vaccum for the support
- 3-Put the « base » for ZIF insertion « tool », parallel to the breadboard

RETURN

HOME

NEXT

Page : 2/13

Go to LAPP Menu for other processes.

- Step by step guidance

- Process anticipation

- **Checkbox steps confirmation**



Steps for Back

Step 1

Step 2

Step 3

Step 4

Step 5

Step 6

Step 7

Step 8

- Step by step guidance
- Process anticipation
- Checkbox steps confirmation
- **Disable until previous checked**



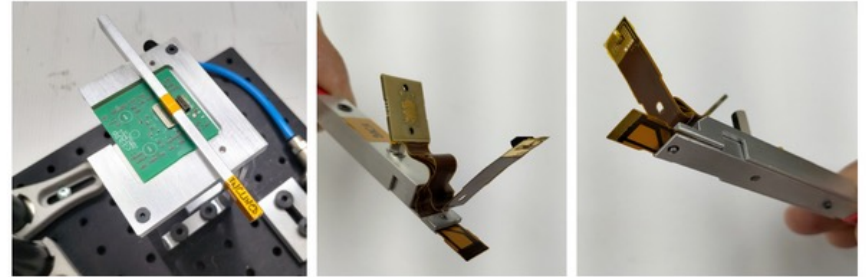
MOUNTING THE PIGTAIL

BACK

ZIF insertion

4- Place the (**noted INCLINED**) locking tool for ZIF between ZIF and CLM for HV wire bond protection in the CLM area (in contact with the stops).

5- Clamp the pigtail in the insertion tool (**noted BACK**). Insertion tool clamps the data pigtail only. Locking is not possible if both flexes are clamped. The pin passes through the strain relief hole.



- 4-Place the INCLINED locking tool for ZIF between ZIF and CLM
- 5-Clamp the pigtail in the Flat/Front insertion tool, data pigtail only.

RETURN

HOME

NEXT

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Go to LAPP Menu for other processes.

- Interactive process
- PostgreSQL for curing completion
- DB Timer → DB confirmation

MOUNTING THE PIGTAIL

BACK

Strain relief implementation

18- Deposit the resin in the hole. Take care to fill correctly the strain relief and to have a contact between resin and the hybrid.

Form a "mushroom" drop on top.

Resin deposition can be done by hand or thanks to a calibrated dispenser.

19- Let cure, duration depends on the resin used (30min for DP100).
The fork remains in position during the curing.



RD53A cell for illustration

Resin Selection

DP100/30min

18-Deposit the resin (Time of deposition)

19-Let cure depending on the resin use (Used resin)

DB Timer

RETURN

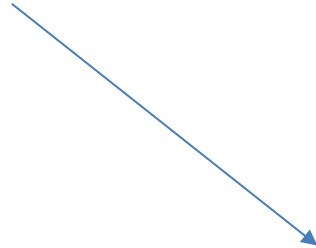
HOME

NEXT

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Go to LAPP Menu for other processes.

- Interactive process
- InfluxDB for curing completion
- DB Timer → DB confirmation
- **Checkboxes disable**
NEXT activate



MOUNTING THE PIGTAIL

BACK

Strain relief implementation

18- Deposit the resin in the hole. Take care to fill correctly the strain relief and to have a contact between resin and the hybrid.

Form a "mushroom" drop on top.

Resin deposition can be done by hand or thanks to a calibrated dispenser.

19- Let cure, duration depends on the resin used (30min for DP100).
The fork remains in position during the curing.



RD53A cell for illustration

Resin Selection

3M/2011/24h

18-Deposit the resin (Time of deposition)

19-Let cure depending on the resin use (Used resin)

DB Timer

RETURN

HOME

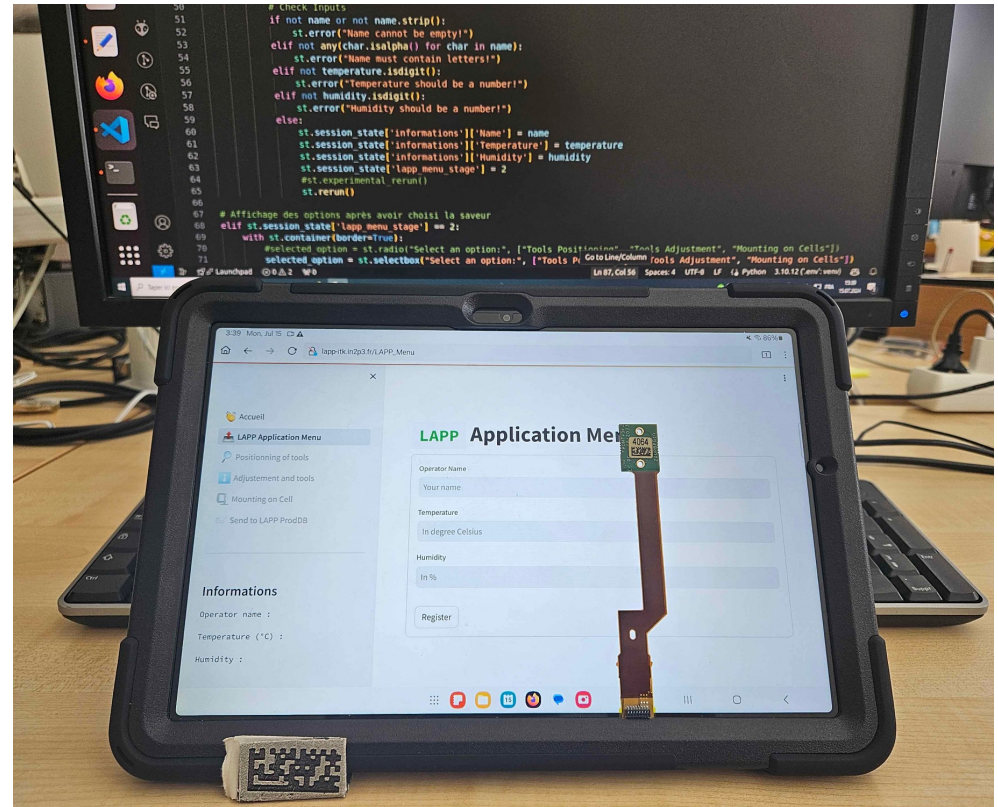
NEXT

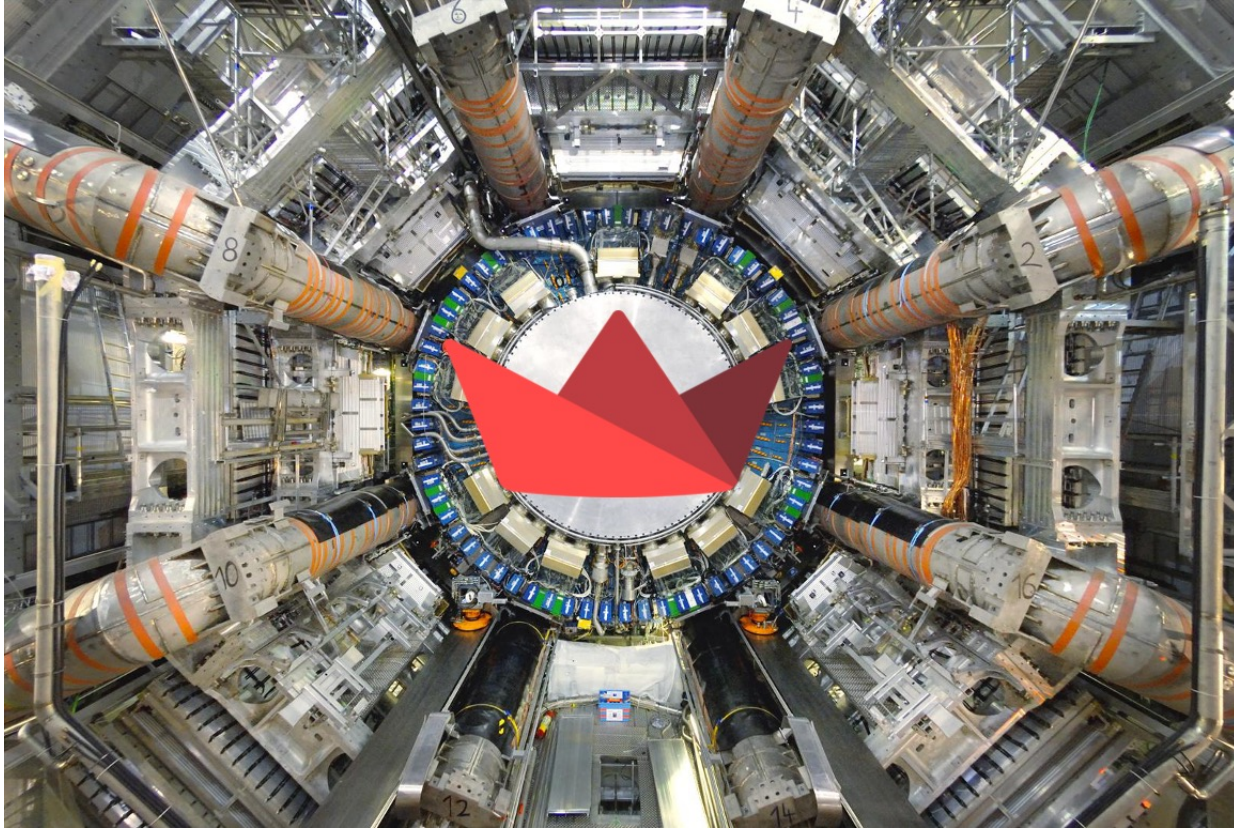
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Go to LAPP Menu for other processes.

Summary

- WebApp is fonctionnal
- Navigate through the processes
- Missing DB Integration





THANK YOU