

**ePIC SVT WP3 Electrical Interfaces Meeting**  
**December 12, 2024**

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# **ePIC SVT daisy chain SpTAB structure: proposal on possible realization**

**RPE LTU:**

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*Ihor Tymchuk (responsible, speaker)*

*Maksym Protsenko*

# Outline

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- ❖ Initial data/idea
- ❖ Proposal on possible realization
- ❖ Questions
- ❖ Next steps/plan
- ❖ Conclusions

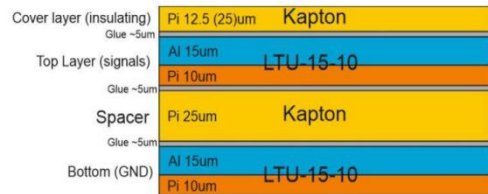
# Initial data/idea

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## Marcello's slides

### Proposed stack-up

#### Schematic cross-section of M-FPC and B-FPC

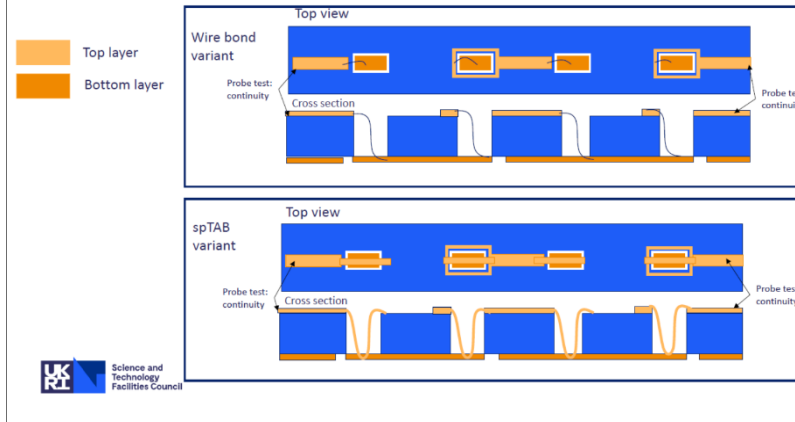


Same as Low Trl OB FPC prototype 1



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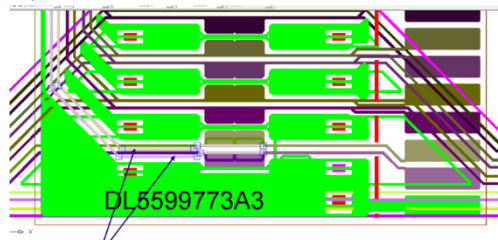
### Daisy chain prototypes



## Approaches and design features implemented in ePIC STV L4 FPC

### Modification 6

**Modification:** To shift tracks on B-FPC (only type B) to reduce overlap of counter phase signals with respect to M-FPC

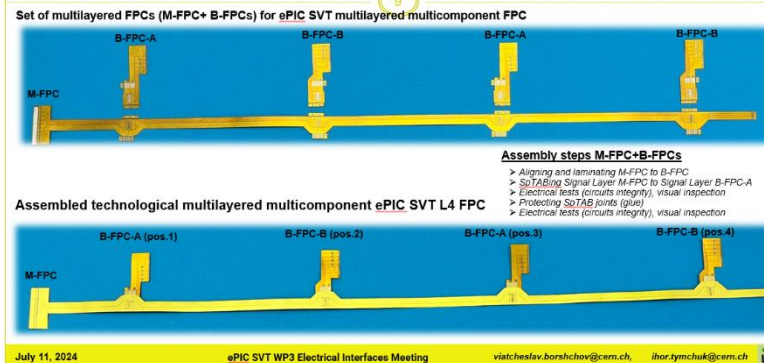


DONE: Traces are shifted

May 17, 2024

viatcheslav.borshchov@cern.ch, ihor.tymchuk@cern.ch

### Technological ePIC SVT L4 FPCs



July 11, 2024

ePIC SVT WP3 Electrical Interfaces Meeting

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### ePIC SVT L4 FPC prototypes and sets of FPCs shipped to STFC DIL

Assembled multilayered multicomponent ePIC SVT L4 FPC prototypes

Sets FPCs for ePIC SVT L4 FPC prototypes

**Delivered FPCs:**

- > 4 prototypes of assembled ePIC SVT-L4 FPC
- > 4 sets of FPC prototypes for ePIC SVT-L4 FPCs (4 M-FPCs+ 16 B-FPCs)

Note: all FPCs are packed in ESD protective film packages

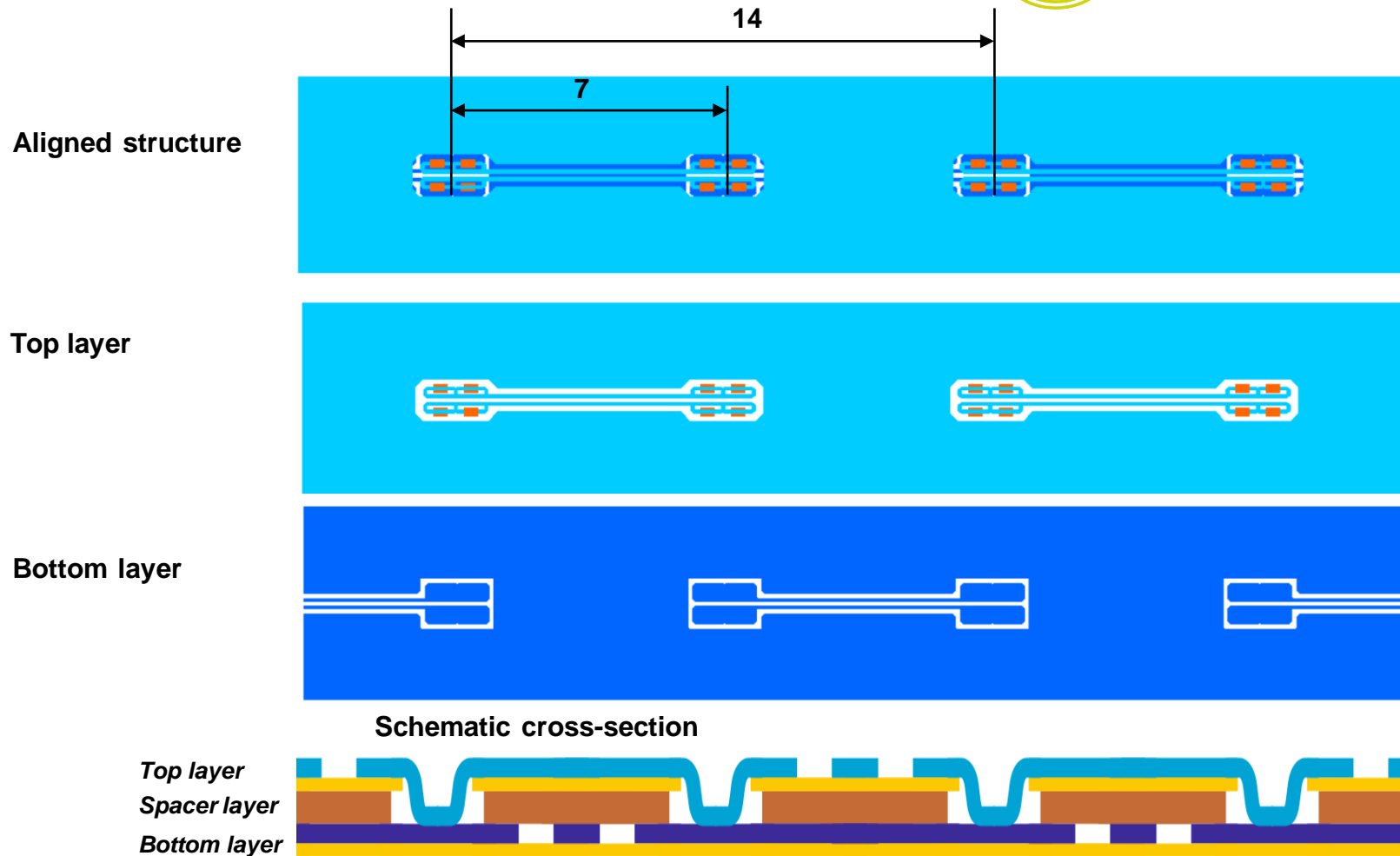
October 10, 2024

ePIC SVT WP3 Electrical Interfaces Meeting

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# Possible realization of SpTAB ePIC SVT daisy chain structure (DChSt)



## Some design features:

- Structure same as for ePIC SVT L4 FPC
- SpTAB area same as for ePIC SVT L4 FPC
- Width of traces in bond area ~70um
- Pitch of bond areas in one structure -7mm
- Pitch of structures -14mm

# Questions

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- ❖ Are contact pads on top layer needed only on ends of daisy chain structure or also intermediate pads are needed?
- ❖ Ni layer on contact pads? Is it necessary? Bare aluminium?
- ❖ Preferable dimensions of the contact pads for probes?
- ❖ Which types of the structure need to be provided? Assembled (SpTABed + protected) or unassembled (not SpTABed)?
- ❖ Which parameters on the Daisy chain structures will be measured/tested?

# Next steps/plan

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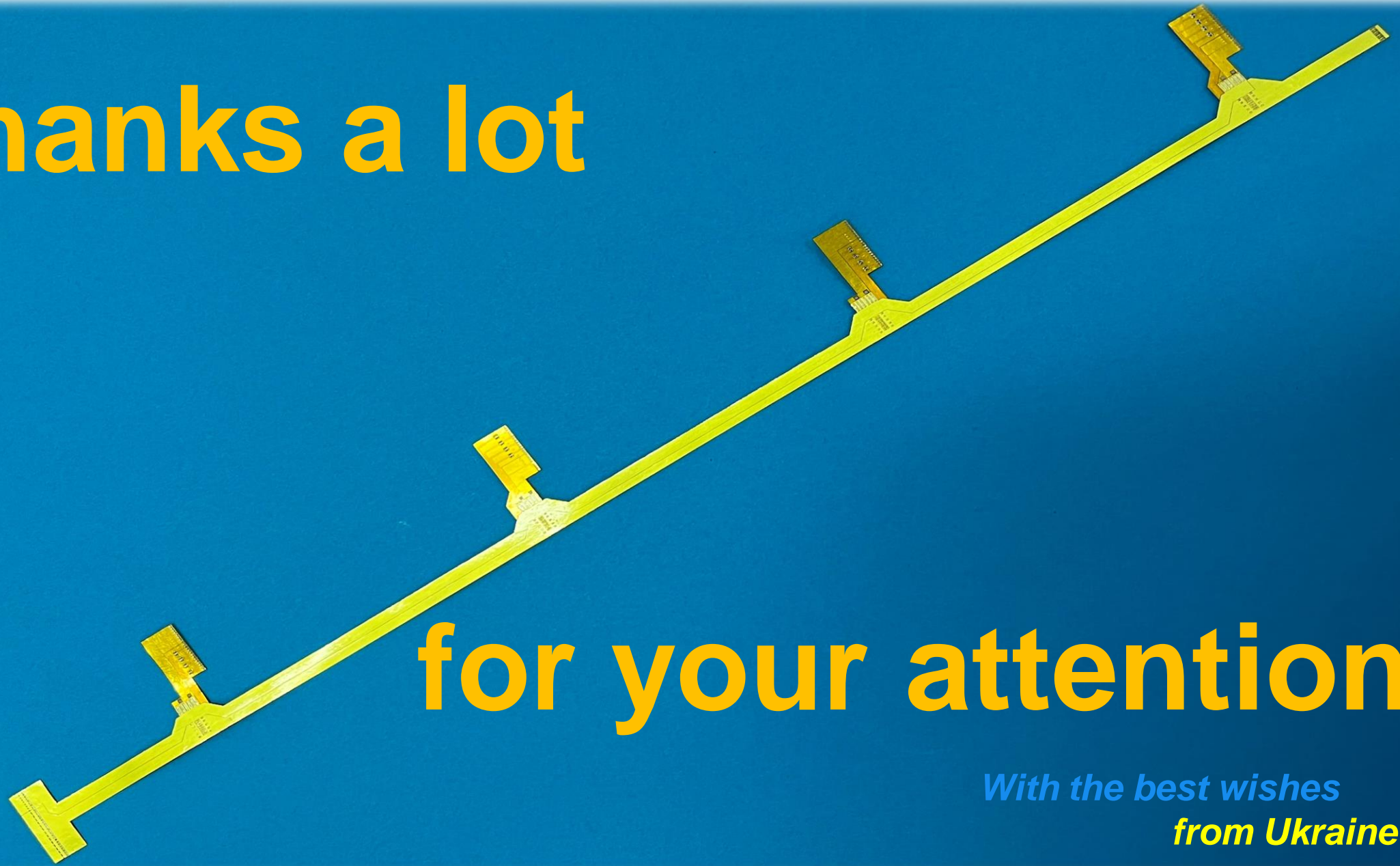
- ❖ Finalizing design
- ❖ Sending for final consideration, agreeing
- ❖ Designing photomasks
- ❖ Manufacturing SpTAB daisy chain structures

# Conclusions

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- SpTAB daisy chain structure preliminary design developed and proposed
- Daisy chain structure realized similar to ePIC SVT L4 FPC in bond areas
- Next steps are defined and proposed

# Thanks a lot



# for your attention!

*With the best wishes  
from Ukraine!*