COST REDUCTION BY STANDARDIZING THE COLLECTOR MOUNTING INTERFACE

Final Dissemination Workshop

TASK 54

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AGENDA

- Market for ST and PV mounting systems
- Definition of a mounting interface standard
- Conclusion

Market for ST and PV mounting systems

- Screening of 188 mounting systems (68 % PV, 32% ST) from 115 suppliers
  - PV: open market due to standard
    - competition and scaling effects leads to low cost

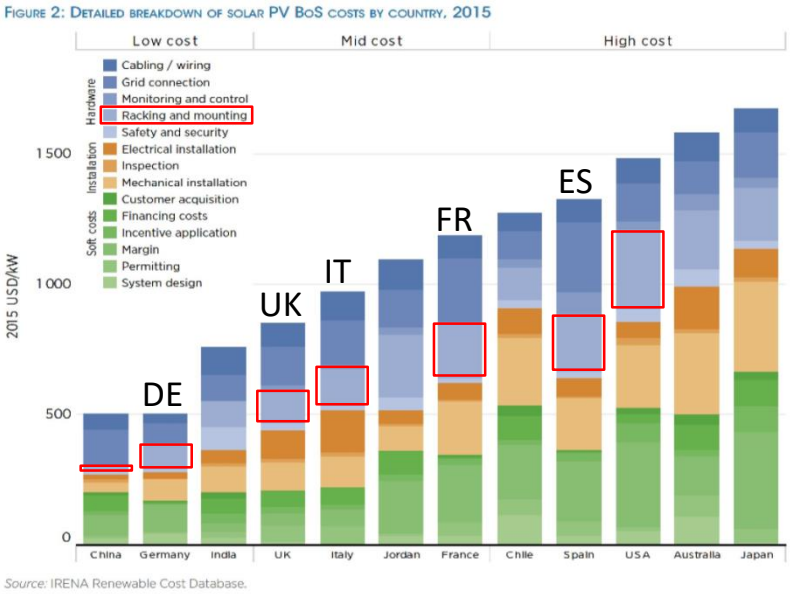

FIGURE 2: DETAILED BREAKDOWN OF SOLAR PV BOS COSTS BY COUNTRY, 2015

Source: IRENA Renewable Cost Database.

- Cost for PV racking&mounting
  DE, UK, IT, FR, ES 100..200 US$ / kWp (Source: IRENA - The power to change solar and wind cost reduction potential 2016)
  - Round about 11..22 € / m² PV racking&m. (assumption 8 m² for 1kWp)

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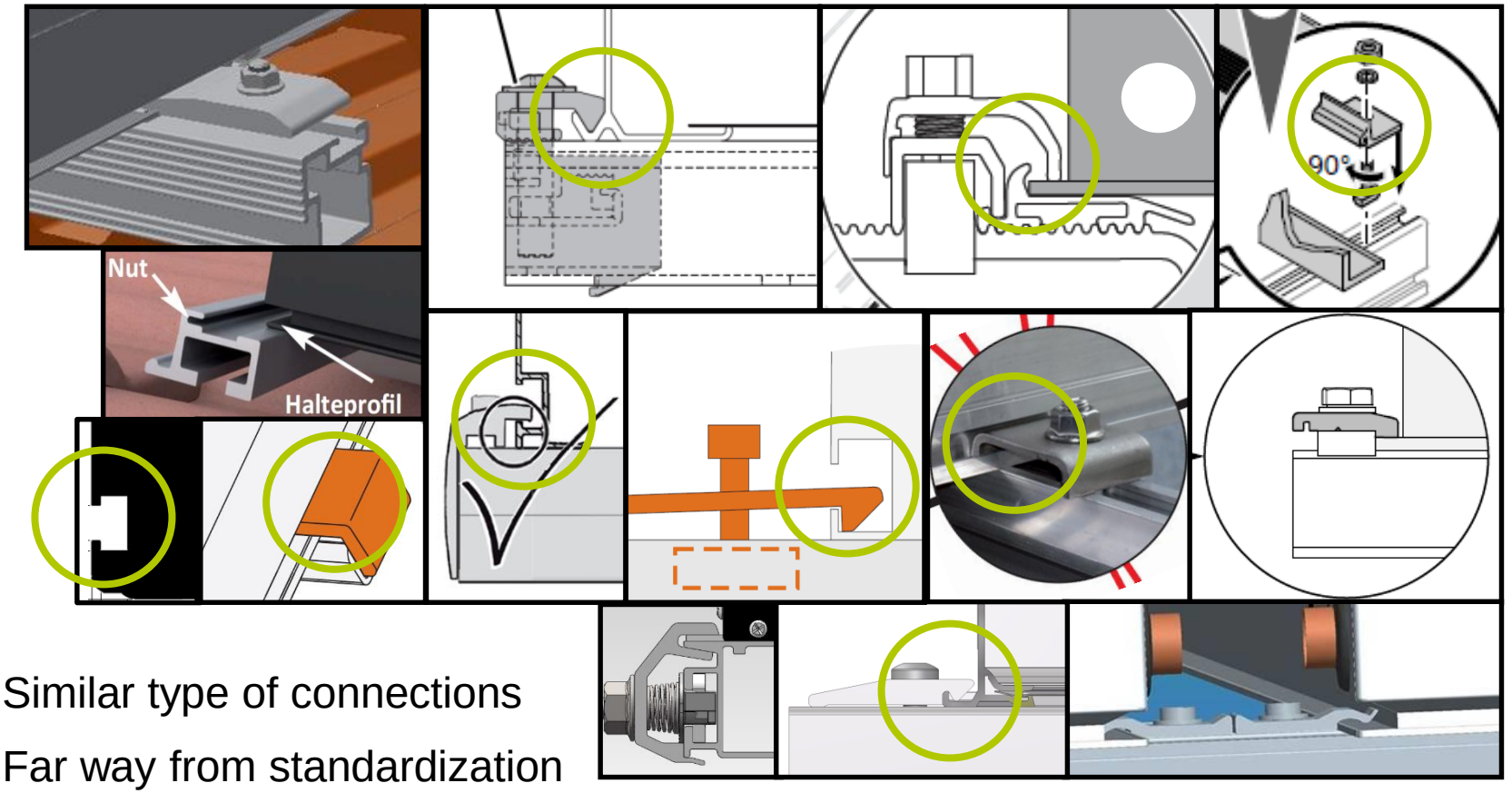
Market for ST and PV mounting systems

- ST: closed market, every collector has its own frame, fixing / mounting system
  - No standard, low volume for each system
  - High cost for development, certification, missing scaling effects
- Costs for ST racking&mounting for pitched roof DE
  - Small DHW installations: 35..60 € / m²
  - Combi systems up to 30 m²: 25..50 € / m²

Market for ST and PV mounting systems examples



- Similar type of connections
- Far way from standardization

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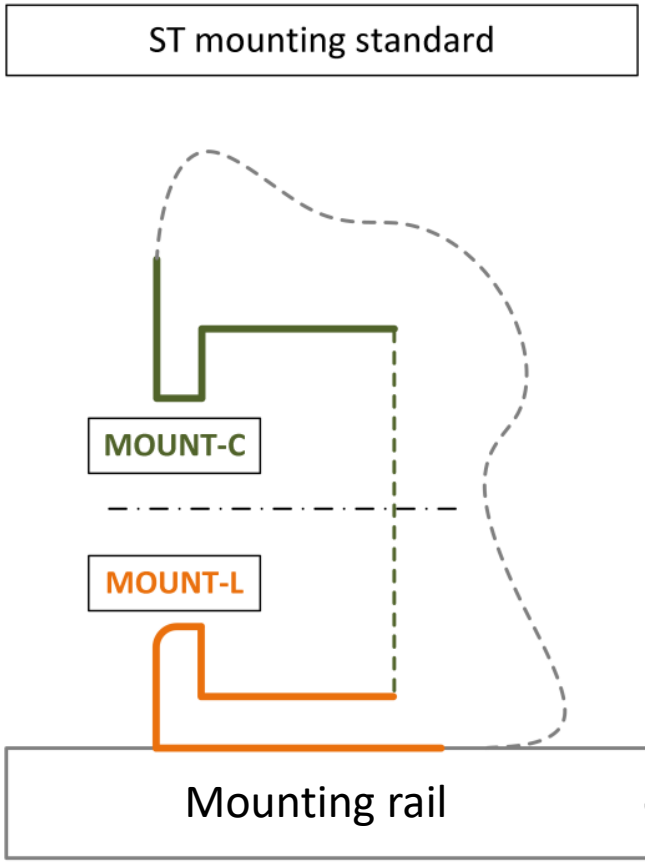
Definition of a mounting interface standard

- Apply best practice solutions
- Open interface to connect with standard parts (nuts and bolds)
- Easy implementation into existing collector designs
- First draft:
  - MOUNT-L
  - Extended MOUNT-C which is compatible with MOUNT-L and allows connection to standard parts



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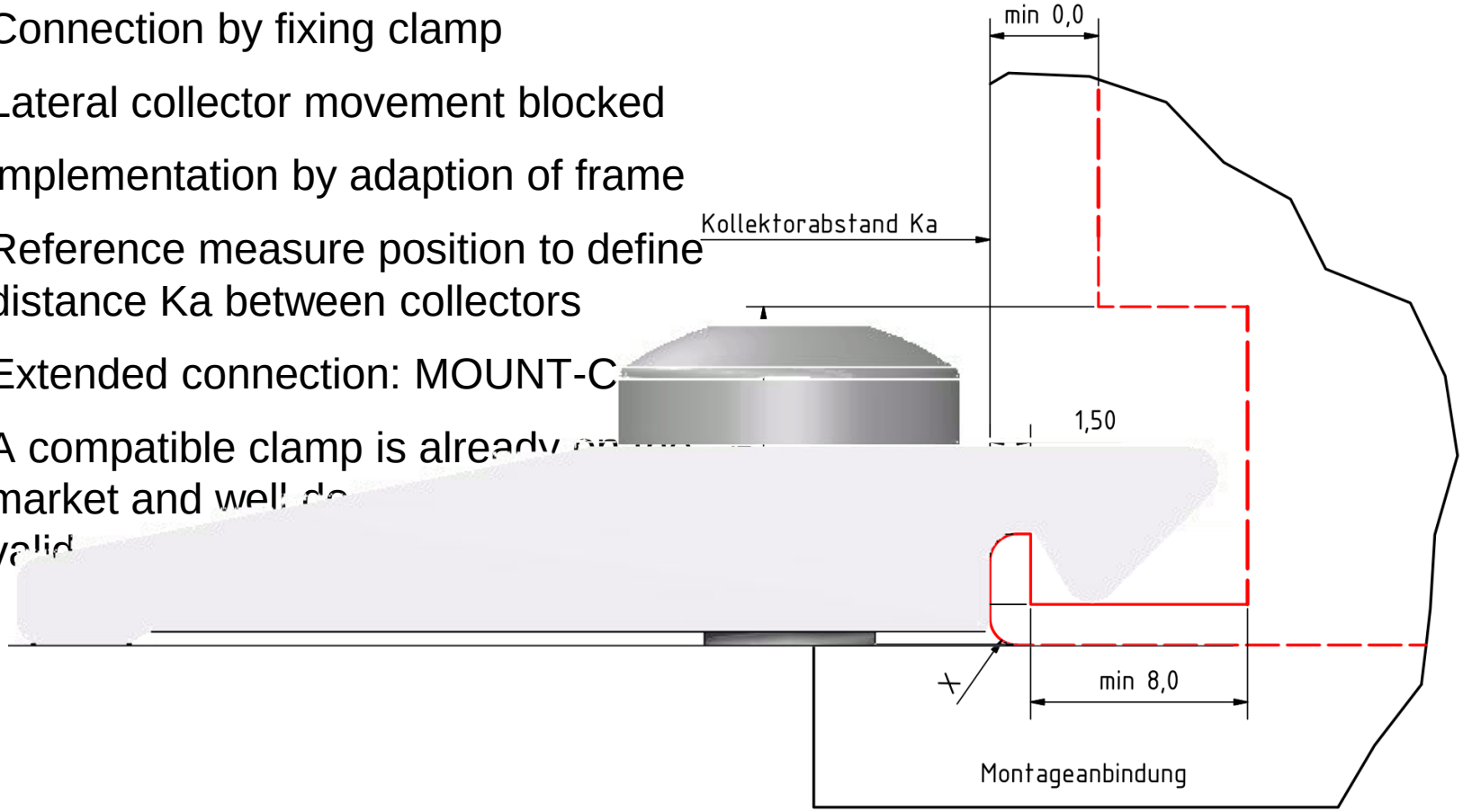
MOUNT-L in detail

- Connection by fixing clamp
- Lateral collector movement blocked
- implementation by adaption of frame
- Reference measure position to define distance Ka between collectors
- Extended connection: MOUNT-C
- A compatible clamp is already on the market and well de
valid



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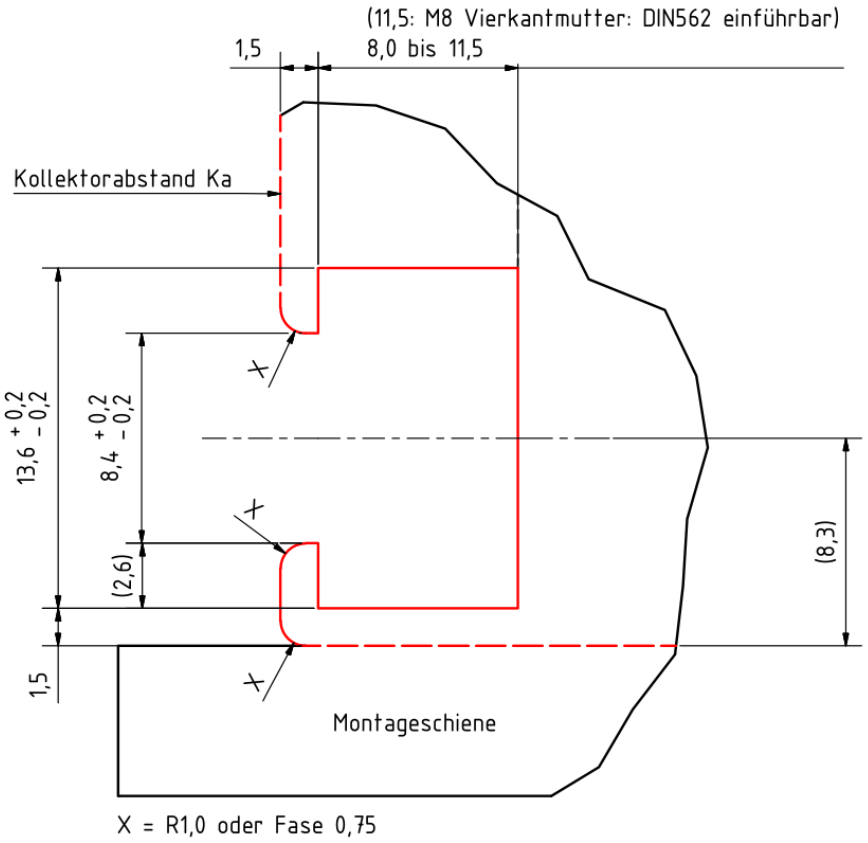
Extended MOUNT-C in detail

- MOUNT-C with additional advantage
- Full compatibility to MOUNT-L
- Dimensions: Tolerances consider abrasion of manufacturing die
- Ready to connect to standard M8 screw parts:
  DIN 557&562 ISO 4023&4017



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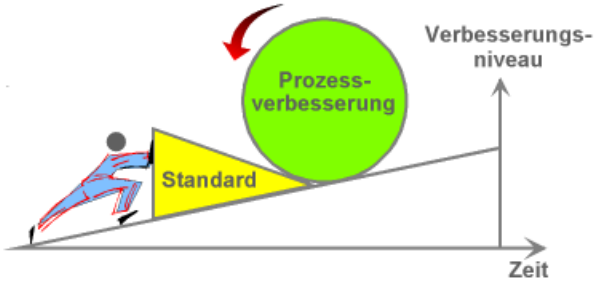
Conclusion



- A market screening for PV/ST mounting systems showed that ST mounting systems are lacking a standard mounting interface leading to high cost
- High potential for costs reduction in terms of fixing and mounting is by simplifying the market for ST mounting systems by providing an open interface standard. This should lead to lower product cost, higher production volumes and more competition (5-10 EUR/m²)
- An open, two-staged standard interface (1) MOUNT-L and (2) MOUNT-C was defined in order to provide the basis for a future cost reduction

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Thank you for your attention!

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More on Task 54:

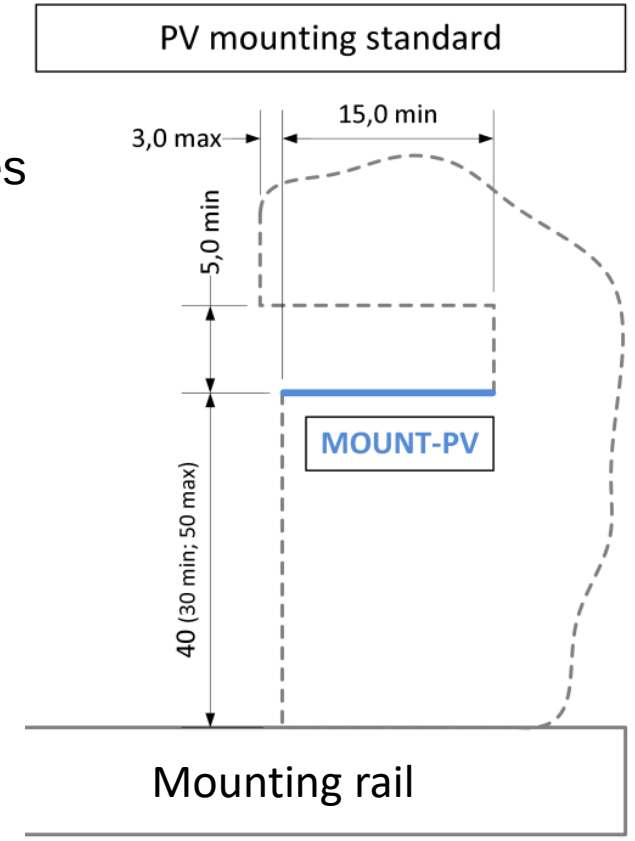
http://task54.iea-shc.org

https://twitter.com/iea_shc_task54

Definition of a mounting interface standard

- Check PV mounting systems
  - Weight of ST collectors much higher and larger size than of PV modules
  - Collision of fixing interface with position of hydraulic connections
  - Hard to combine with ST sliding protection sheet

→ no solution für solar thermal



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