Marinisation and upscaling of All Electric Drive Train

MU-EDRIVE

Newcastle University

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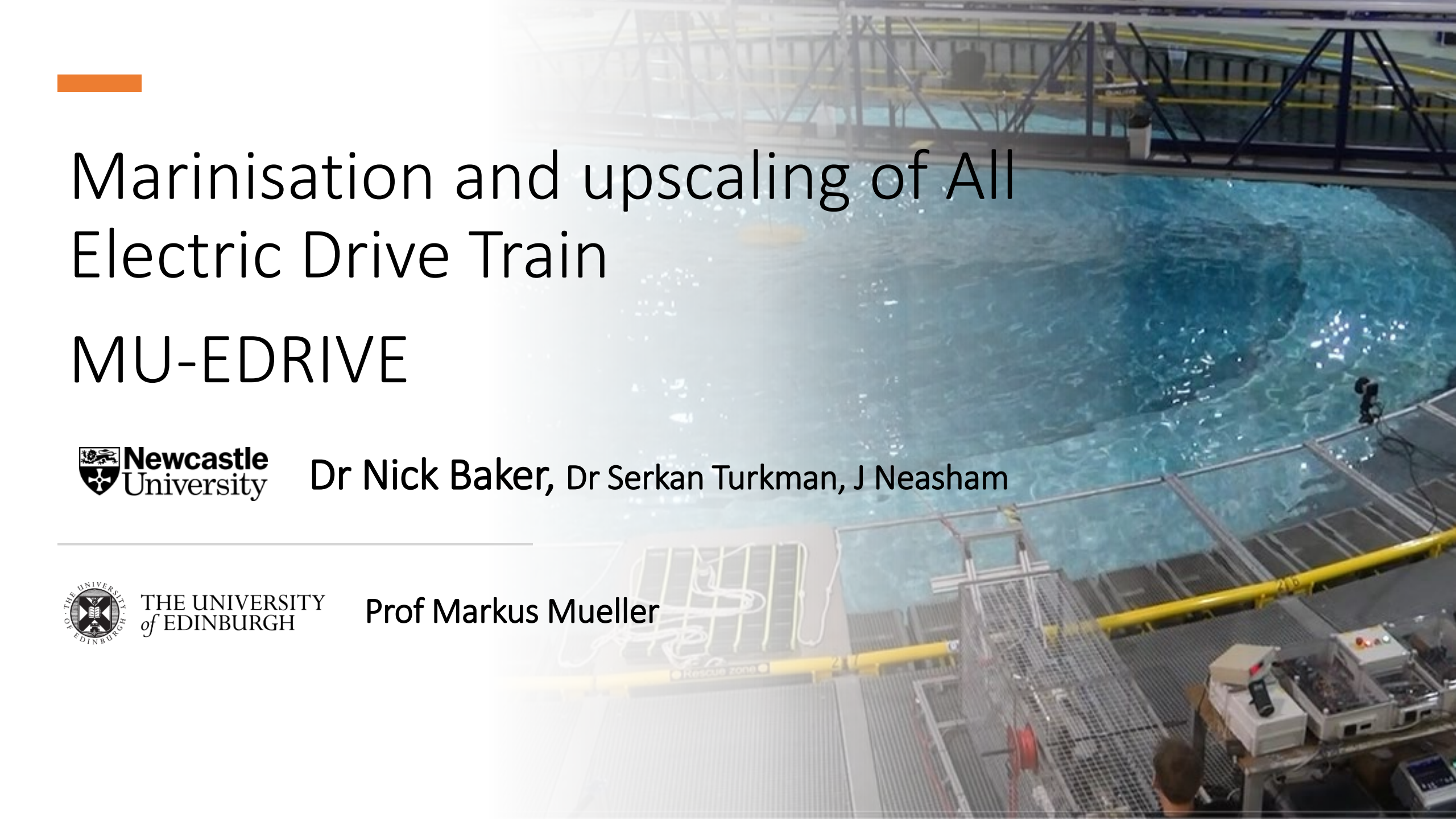
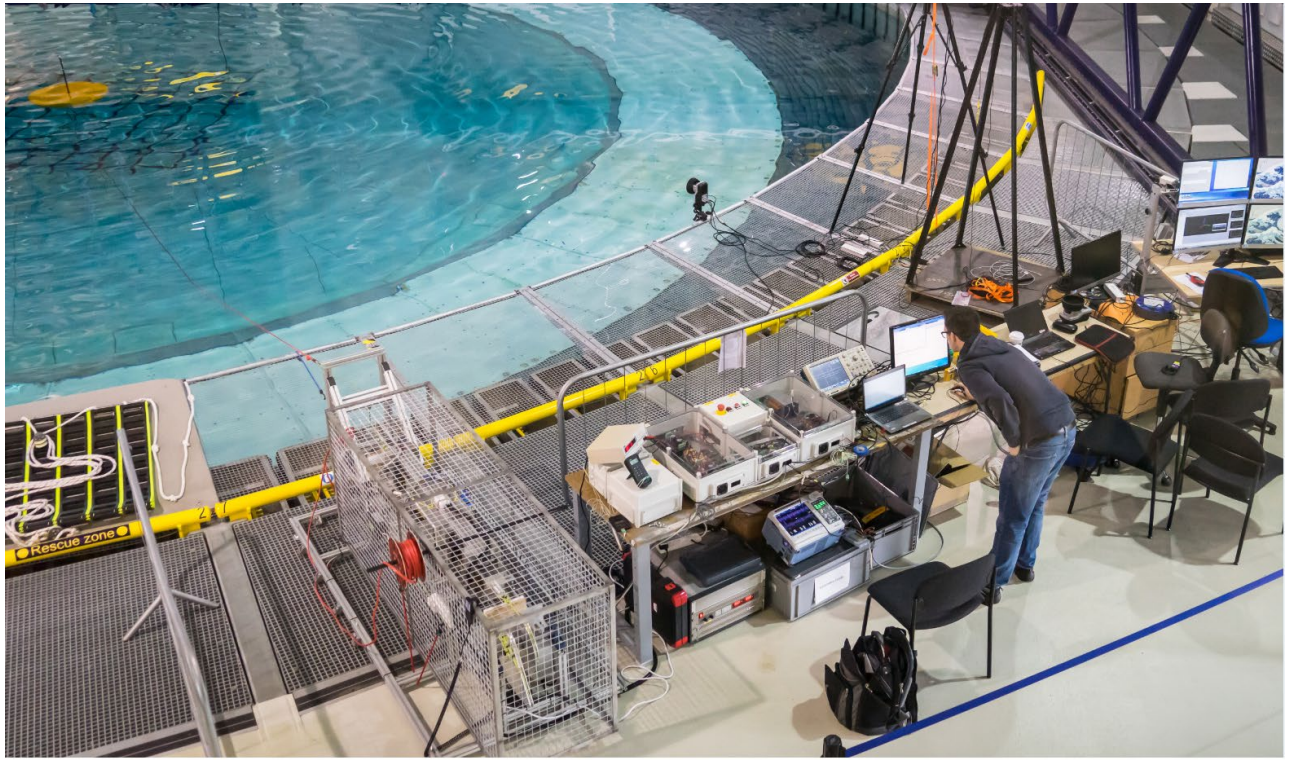


As a team we have already proved

- Slow speed electrical machines suitable for WECs exist
- Reliable power electronics
- WEC can be controlled via the power take off

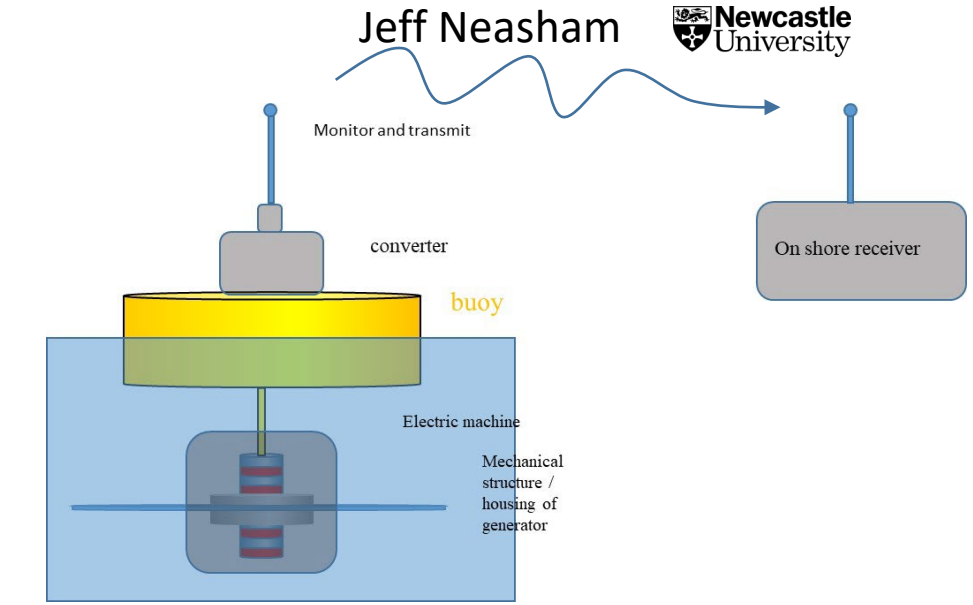


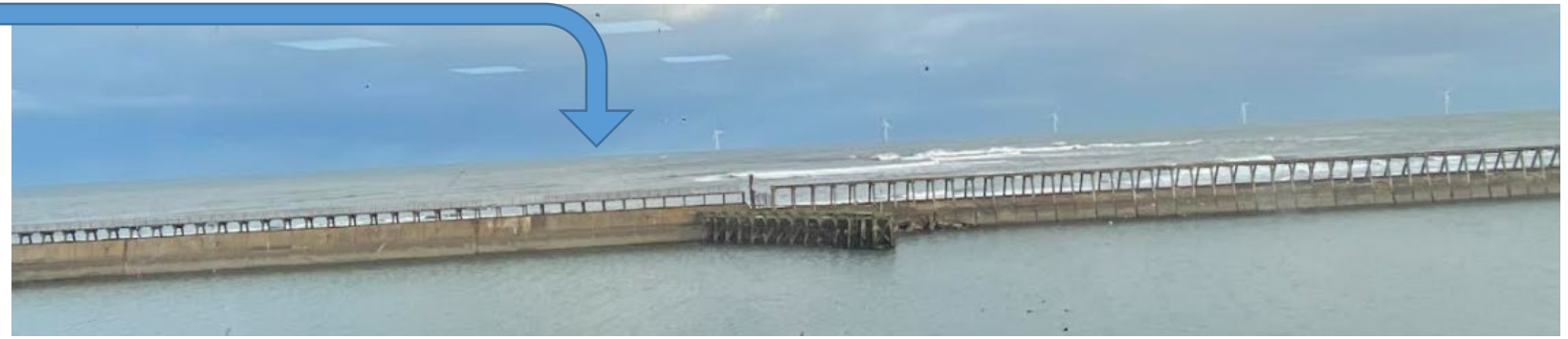
As a team we will now investigate

1. Operation in the marine environment
2. Reliability
3. Integration in a real WEC
4. Upscaling

Case study 1: Usmart bouy

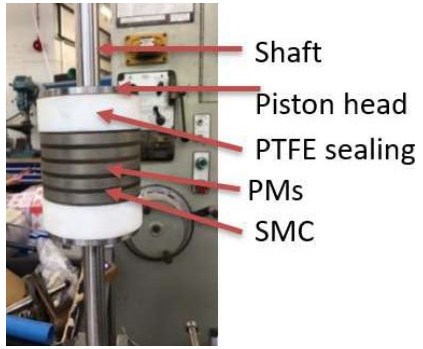
- Usmart bouy
  - Underwater Internet of things
  - 3km off the North East England Coast
  - 12 months monitored operation in the sea

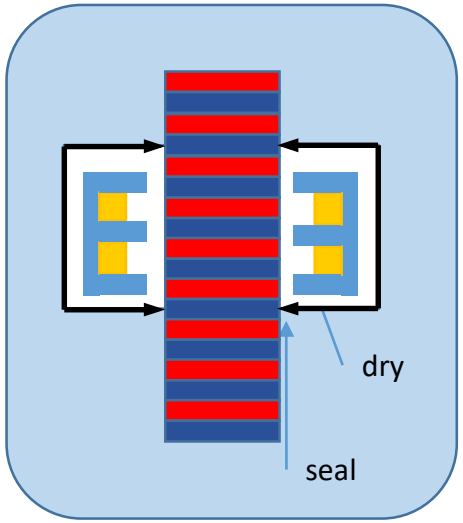


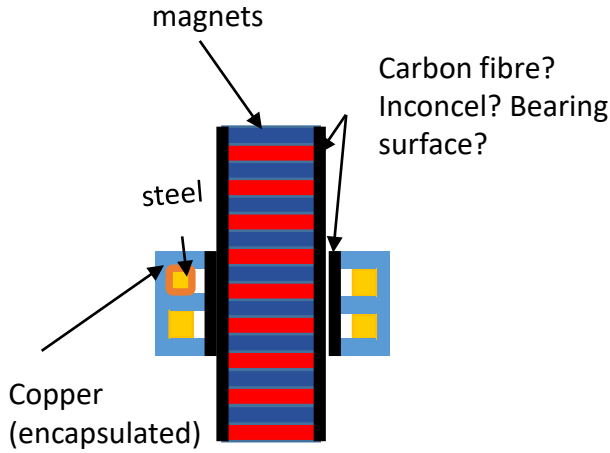


Case study 1: Usmart bouy

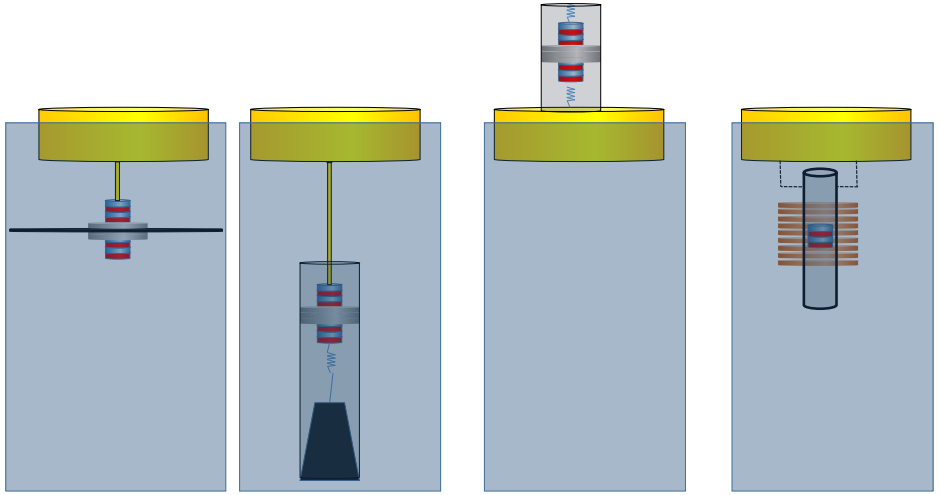
- Run generator flooded ?
  - Decide configuration
  - Corrosion
    - Stationary parts
    - Magnetic gap







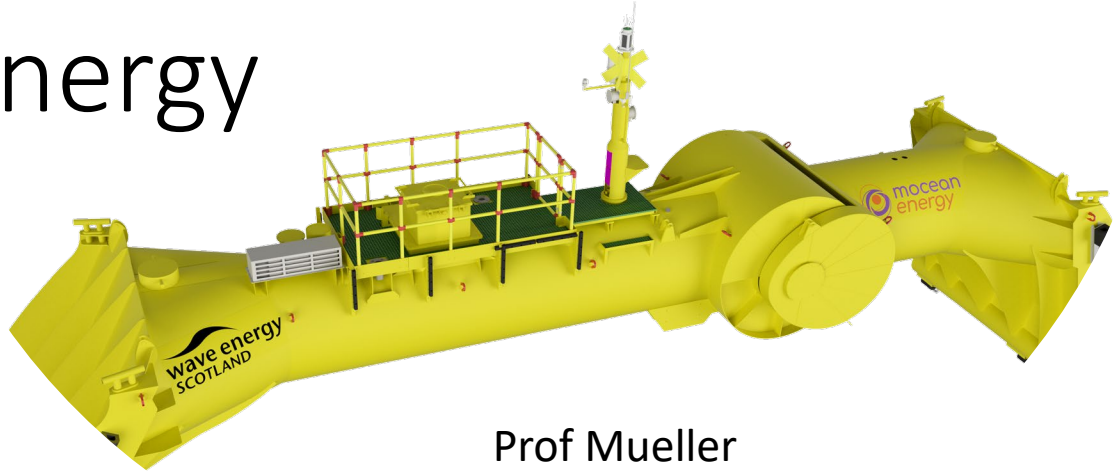
Dr Turkmen



Dr Baker

Case study 2: Mocean Energy

- Working with developer on a realistic scale power take off
- Magnetic gear box
- Mechanical integration in a device



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