CMIP infrastructure; successes and where next

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CMIP6 successes: data

<table>
<thead>
<tr>
<th></th>
<th>Exercise</th>
<th>Unique (PB)</th>
<th>Replicas (PB)</th>
<th>Total (PB)</th>
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<tbody>
<tr>
<td>CMIP6</td>
<td>12.4</td>
<td>10.3</td>
<td></td>
<td>22.7</td>
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<td>3.7</td>
<td></td>
<td>5.3</td>
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<tr>
<td>CORDEX</td>
<td>1.4</td>
<td></td>
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<td>1.4</td>
</tr>
</tbody>
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ESGF data volumes according to dashboard
http://esgf-ui.cmcc.it/esgf-dashboard-ui/federated-view.html
CMIP6 successes: Structure

- Common data standards
  - CMOR3
  - Data Request & MIP tables defining variables
  - Many tools, such as ESMValTool and the PCMDI Metrics Package are leveraging CMIP6 conventions
  - Other projects imitating CMIP6
    - CORDEX
    - Enables services to be built on top of the core activity

- Extensibility
  - ZECMIP incorporated into CDRMIP/C4MIP
  - CovidMIP added to DAMIP
  - Plan to use this property for CMIP6Plus interim project while we consider future structures
    - Tropical Basin Interaction MIP
  - We continue to register new models
Where next?

• More projects using common or aligned standards and infrastructure
  • CMIP6Plus, CORDEX-CMIP6, independent projects, UK/US model development, …
  • CMIP core + CMIP compatible?
• CMIP infrastructure/standards need to continue to evolve to facilitate expansion, next-generation science and leverage emerging technologies
• Increase data access and usage
  • Collocate compute facilities with data, e.g. JASMIN/UK, GLADE/US, DKRZ/Germany, LLNL/US, DIAS/Japan, CAFÉ/China and private/public cloud will have a role
  • Access needed for regions without their own facilities
• New and emerging technologies; MetaGrid, cloud services, Kerchunk