Supported functionality

• Upload Veda model folders (via GitHub)
• Synchronize
• Browse input data
  • Veda Browse: Multi-select dimensions in a pivot grid
  • Veda Items view: sets, topology and parameters for individual items
    • Network view shows 5 levels
• Define and run cases
  • Solved on local machines or the GAMS engine.
    • KanORS servers could be an option in future.
• Results
• Reports
  • *Visualization features are more powerful than those in Veda2.0*
Benefits of VO

• For individual users
  • No software setup/updates needed
  • Enforces version control discipline via GitHub
  • Model synchronization and runs on state-of-the-art servers
  • Availability of model input/output no longer dependent on local machines
  • Far superior data visualization in Reports, Results, and Browse
    • SANKEY diagrams and maps are easy to make
  • A large number of cases can be accumulated on this platform. Input data comparison possible for any two cases.

• Collaborative working
  • Core team can work more efficiently by working with a shared GitHub folder
Benefits of VO

• Giving access to stakeholders and policy makers
  • Model owners will be able to control the visibility of their models, by user.
  • Give open access only to results.
  • Control over the input/output being downloadable.

• Host open models
  • Models will already be fully functional under VO. Users will be able to browse input/output and look at results.
  • More engaged users can create their own repos on GitHub, make incremental changes, and run scenarios.

• Bulk runs
  • Large number of scenarios could be run in the cloud – in parallel.
The Reports feature of Veda2.0 will be included in the ETSAP license as a part of this proposal.

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2 onward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost per CP</td>
<td>€ 2,000</td>
<td>€ 1,500</td>
</tr>
<tr>
<td>Indicative total for 20 partners</td>
<td>€ 40,000</td>
<td>€ 30,000</td>
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Collaborative development and deployment
VO has a scalable Architecture

SYNC and SOLVE

Queue

Worker 1

Worker 2

Worker n

Browse input and output

GitHub

Storage

GAMS + CPLEX

Database server
Login screen

https://vedaonline.cloud/Signin.aspx
Anyone can create an account on Veda online registration.
### Amitkanudia's Models

<table>
<thead>
<tr>
<th>Name</th>
<th>GitHub Link</th>
<th>Branch</th>
</tr>
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<tbody>
<tr>
<td>times-ireland-model</td>
<td>/akanudia/times-ireland-model.git</td>
<td>main-40</td>
</tr>
<tr>
<td>VO_Demo_Nov22</td>
<td>/akanudia/VO_Demo_Nov22.git</td>
<td>main</td>
</tr>
<tr>
<td>Demo_012</td>
<td>/akanudia/Demo_012.git</td>
<td>master</td>
</tr>
<tr>
<td>EU_TIMES_Veda2.0</td>
<td>/CanORS-E4SM/CanORS/EU_TIMES_Veda2.0</td>
<td>master</td>
</tr>
<tr>
<td>Demo_0512_Verline</td>
<td>/kanors-emr/Demo_0512_Verline.git</td>
<td>master</td>
</tr>
<tr>
<td>Global_ElectricityFlag</td>
<td>/akanudia/Global_ElectricityFlag.git</td>
<td>main</td>
</tr>
<tr>
<td>Model_Demo_Adv_Veda</td>
<td>/kanors-emr/Model_Demo_Adv_Veda.git</td>
<td>master</td>
</tr>
<tr>
<td>Model_Demo_Adv_Veda</td>
<td>/kanors-emr/Model_Demo_Adv_Veda.git</td>
<td>VO_Demo_Nov22</td>
</tr>
<tr>
<td>times-ireland-model</td>
<td>/akanudia/times-ireland-model.git</td>
<td>main</td>
</tr>
<tr>
<td>VO_Demo</td>
<td>/akanudia/VO_Demo.git</td>
<td>main</td>
</tr>
</tbody>
</table>

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**The home page – not logged in**

**Input and output of public models can be browsed without logging in**
User “kanorsveda” should be granted access in order to use a private Github repo
Visibility of private models is under user control
Navigator - to refresh from Github and Synchronize models
### Item detail view

**EU_GGTAS15**

**Gas Turbine Combined Cycle Gas Advanced**

**Scenario:** 11_TECHS_Power

**Sector:** ELEC

**Type:** ELE

**SubType:**
- Activity Unit: PW
- Capacity Unit: GW
- Sets: ELEC
- TimeSlice: DANYTE

**Region:** AL, AT, BA, BE, BG, CH, CY, CZ, DE, DK, EE, EL, FI, FR, HR, HU, IE, IT, KS, LU, LV, LT, ME, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, UK

**Network Diagram:**
- ELCC02
- EU_GGTAS15
- ELCH1G
Browse input data
Run manager

Model owners can launch runs; solved on GAMS Engine (cloud)
Free Veda online for students

- Mild checks to make sure that users who are registering have an academic email ID (students or teachers).
- It will support only public GitHub repositories, and the models created on VO will also be public.
  - So, all modelling activity performed on this platform dedicated to pedagogical use will be open to all.
- A single cloud server will perform the runs, using open-source solvers. Any run taking longer than 5 minutes will be terminated.
  - This will automatically put a limit on the model size.

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2 onward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloud hardware</td>
<td>€ 10,000</td>
<td>€ 10,000</td>
</tr>
<tr>
<td>GAMS server license</td>
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<td>€ 1,600</td>
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<tr>
<td>Veda License</td>
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<td>€ 12,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>€ 30,000</td>
<td>€ 23,600</td>
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