

aeolus

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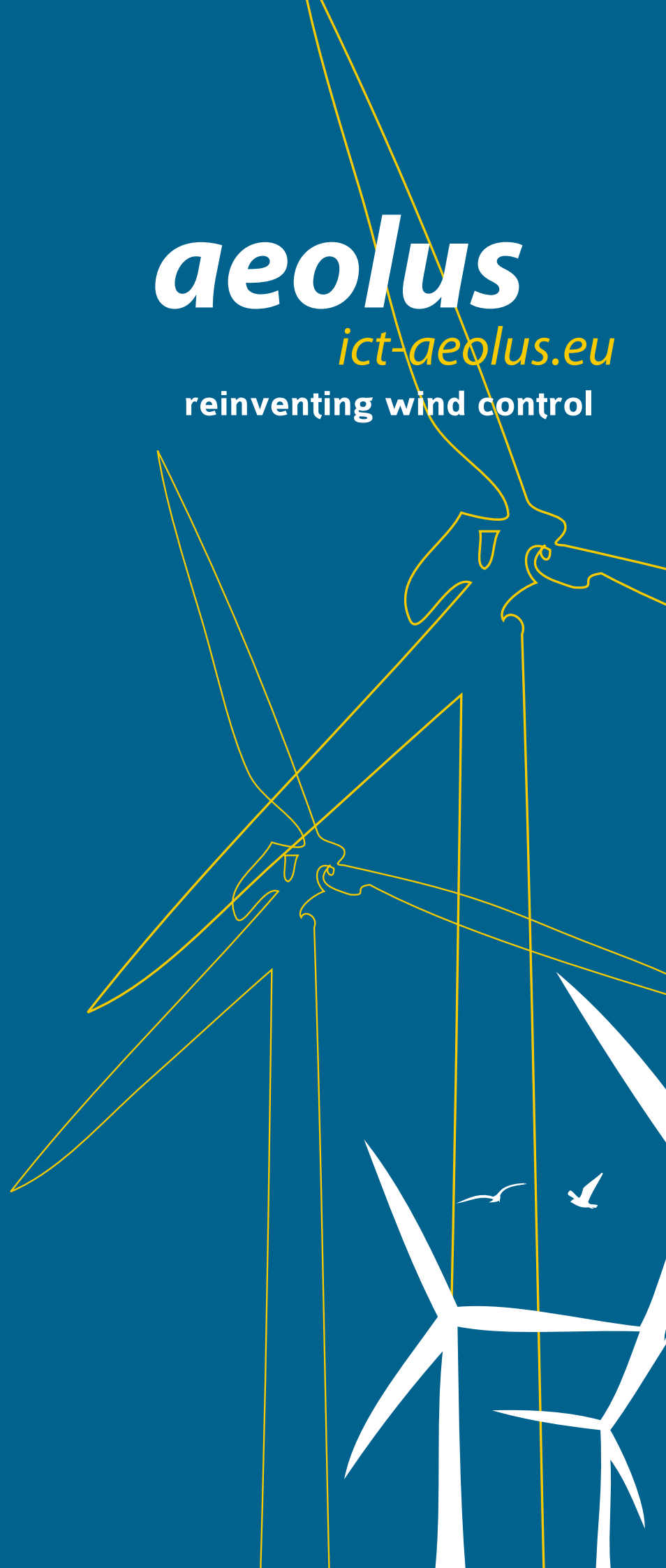
reinventing wind control

For more information on aeolus,
please feel free to contact us or visit
our website, www.ict-aeolus.eu

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about aeolus

aeolus is the ruler of the winds in Greek mythology and the name and inspiration of our project. With our work we aim to reinvent the way we control the wind as a resource for large-scale offshore wind farms. The wind turbines of such farms affect each other in a highly complex manner because each turbine influences the wind flow within the farm. The main ambition of the aeolus project is to develop models and control paradigms, which are based on measurements from a network of sensors, that allow for real-time predictions of these wind flows. This makes for a profoundly flexible wind farm that matches the dynamic nature of wind as well as our needs: a much higher cost-efficiency and energy quality in the future.

future friendly prospects

Today, climate change is on everybody's lips. There is no doubt that an absolute key challenge for Europe in the future will be how to deal with climate change while meeting the rapidly increasing demand for energy at the same time. We need to secure energy supplies for our children in an environmentally sustainable way. Large-scale offshore wind farms have the potential to be an important part of how we do that. At the same time, they are a new market to be won if we want to maintain our European leadership position in the wind industry. We are halfway there, but still considerable research and development tasks remain to be carried out before this type of wind farms becomes the efficient, stable, safe, predictable and controllable supply of energy that we will depend upon in the future. aeolus gets us closer to this goal every day.

partners and funding

The aeolus project is coordinated by Aalborg University, Denmark, through the Department of Electronic Systems, Automation & Control. But characteristically, aeolus is in fact the result of a strong collaboration between a number of competent partners – industrial as well as academic. Aside from Aalborg University, they include

- **Industrial Systems and Control Ltd. (United Kingdom)**
- **Lund University (Sweden)**
- **University of Zagreb (Croatia)**
- **Vestas Wind Systems (Denmark)**
- **Energy Research Centre of the Netherlands (the Netherlands)**

aeolus is co-funded by the European Commission within the 7th Framework Programme and has a total budget of 3.4 million euros.



Facts on aeolus

- Optimal wind farm control
- Optimal power efficiency
- minimizing structural loads
- European leadership in new markets
- Modelling of dynamic interaction through wind flow
- Real-time predictions of wind flows
- Flexibility by distributed control