

Introduction to Simulink + Minidrone Competition

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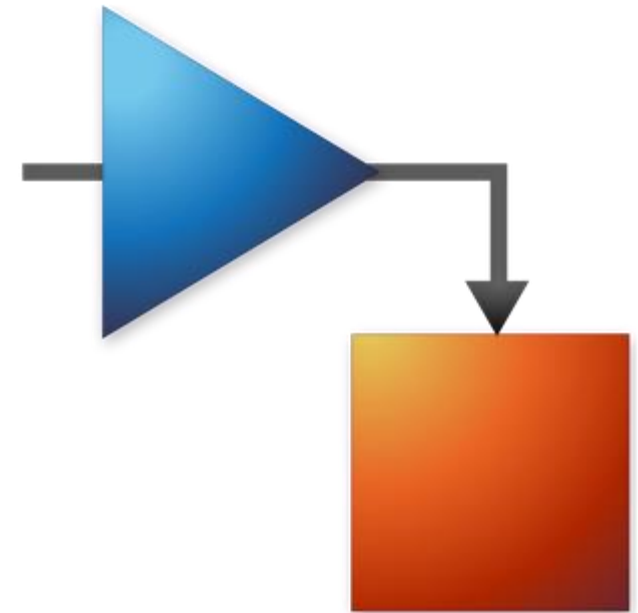


Agenda

- Poll
- What is Simulink?
- What is the minidrone competition?
- Tips from Omar and his experience
- Demo
 - Simulink
 - Minidrone
- More resources
- Ask questions whenever you want!
- Presentation and other resources available here:
<https://github.com/simonthor/kth-matlab-ambassador/tree/master/Seminars/Simulink%20Workshop>

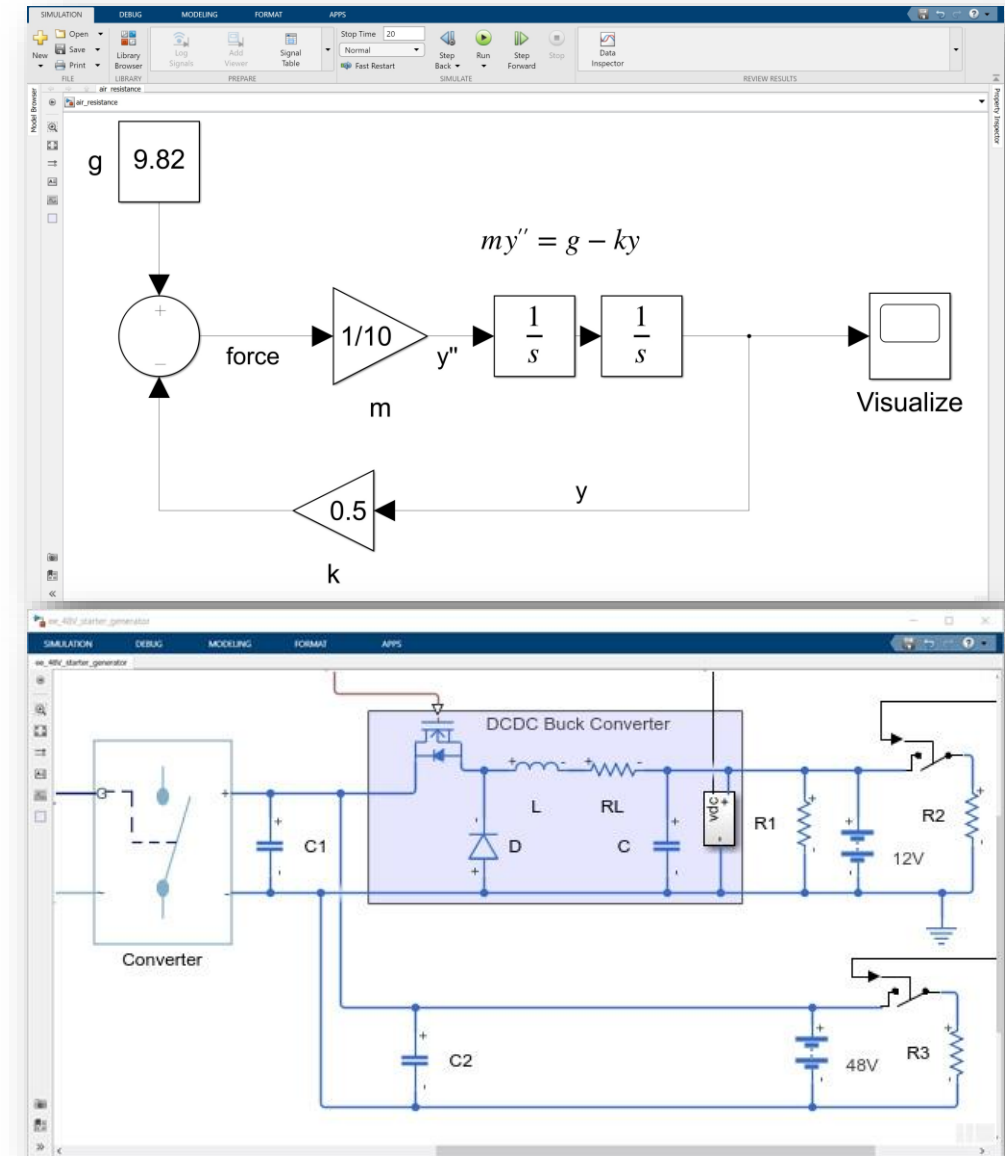
What is Simulink?

- Graphical programming environment
 - Intuitive
 - Easy to debug
- Used for modelling and simulating systems
- Integrates well with MATLAB
 - MATLAB functions
 - Code generation



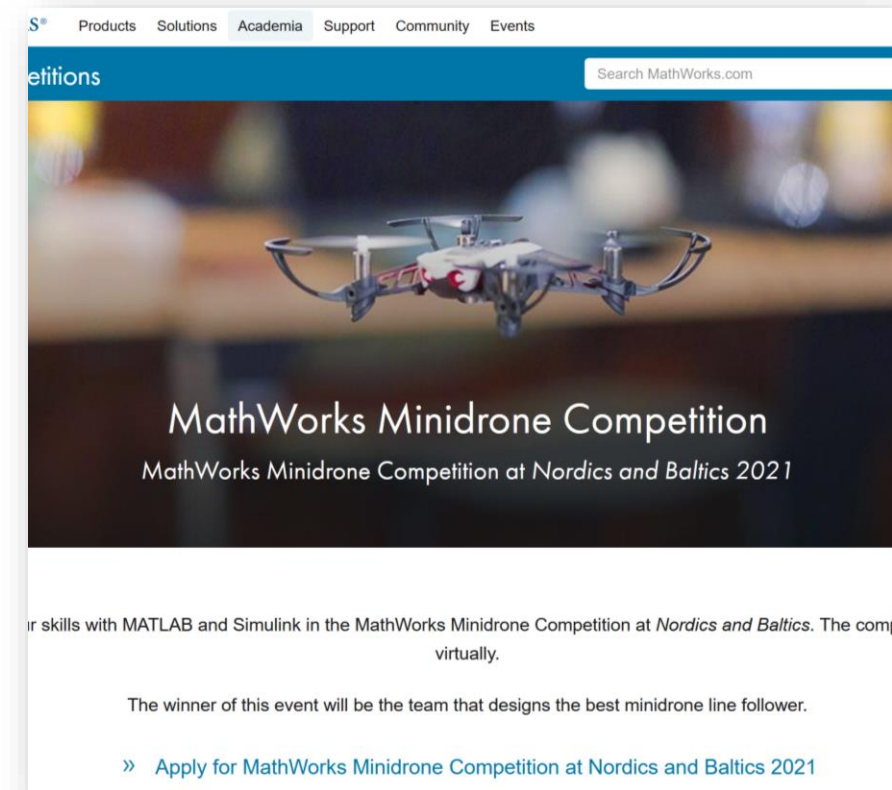
When is Simulink used?

- Robotics, signal processing, wireless communication etc.
- [Scania](#)
- Dynamical systems
- Stateflow for discrete modeling
- Physical systems
 - Simscape
- Much more...



MathWorks Minidrone Competition

- Simulate a minidrone with Simulink
- Follow a line
- Practice computer vision, Simulink, MATLAB etc.
- Students in the Nordics and Baltics are eligible
- 2 – 4 team members
- All participants will get the required software



Competition Timeline

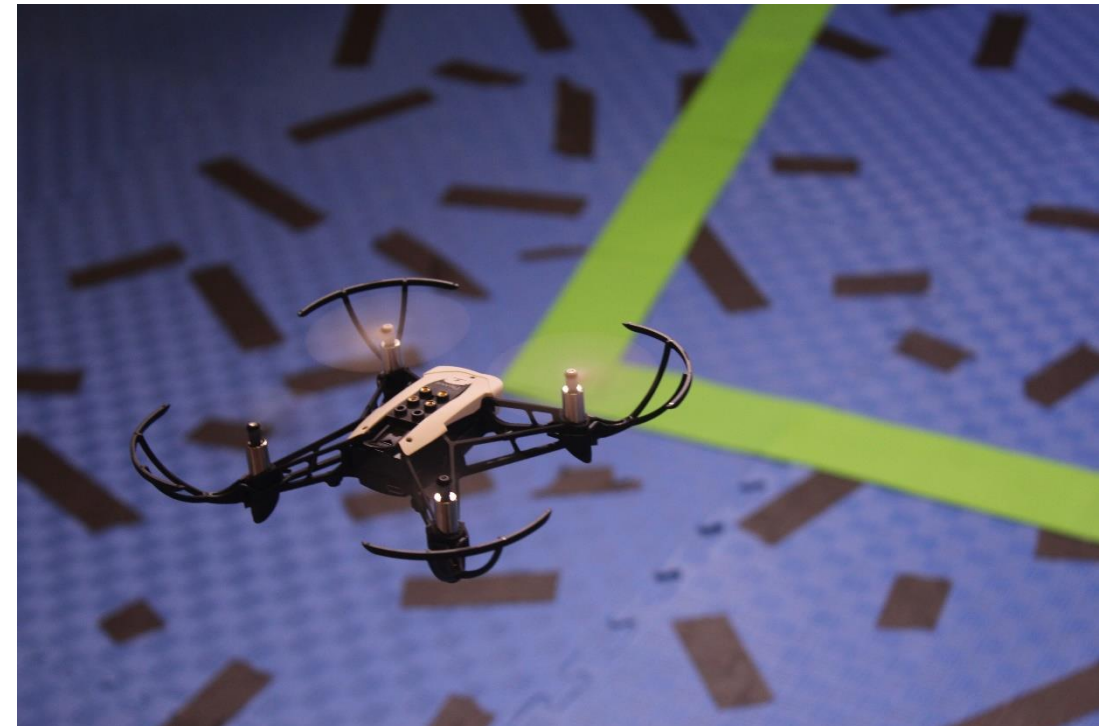
- Round 1:
 - Create a model in Simulink based on the [Simulink Support Package for Parrot Minidrones](#)
 - Submit your model to minidronecompetition@mathworks.com
- Round 2:
 - Top teams (typically 5–7)
 - Deploy model on a real drone and test the model
 - Held in Denmark



Task	Deadline
Round 1 application closure	14 March 2022, 19:00 CET
Simulation submission	25 March 2022
Finalists declaration	25 April 2022
Final round	24 May 2022

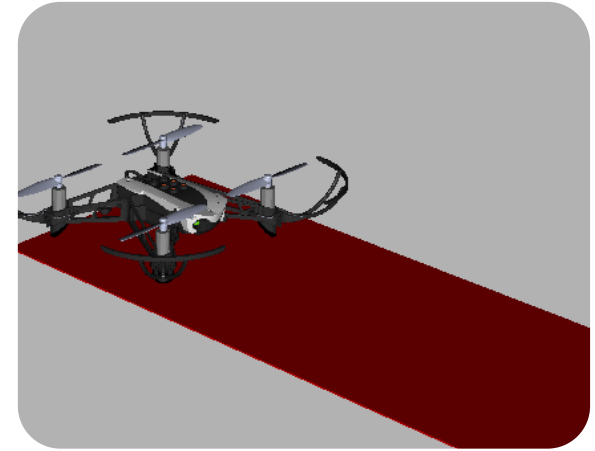
Why join the competition?

- Learn about Simulink, MATLAB, image processing, control systems...
- Potential trip to Denmark! :D
- More tips and experiences from Omar!



Demo

- Modelling a propelled object with air resistance
- Overview of the Parrot minidrone support package

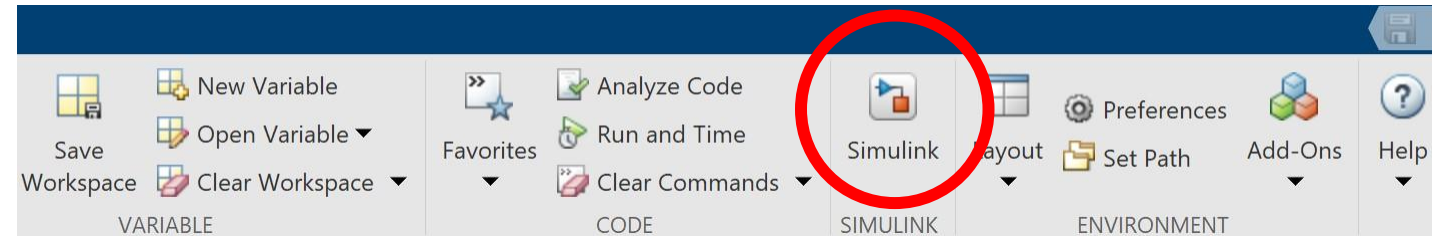


Simulink Online:

<https://drive.matlab.com/sharing/9b0b51b4-f763-4772-a260-4e65450b2b3a>

Simulink Resources

- Launch it from MATLAB!
- [Simulink website](#)
- [Keyboard shortcuts in Simulink](#)
- [Simulink Onramp](#)
- [Stateflow Onramp](#)
- Use Simulink online via [MATLAB online](#)



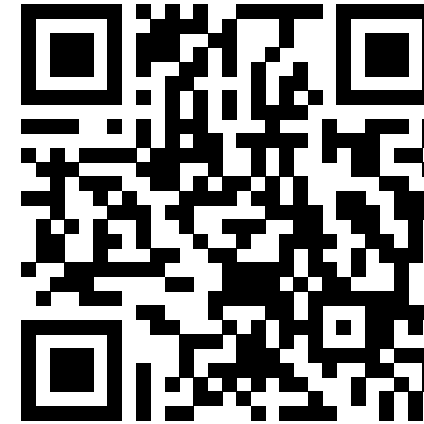
Minidrone Competition Resources

- [Minidrone competition page](#)
- [Getting started guide about the competition](#)
- [Team registration page](#)
- [Simulink support package for PARROT minidrones](#)
- Submit your Simulink model to:
minidronecompetition@mathworks.com

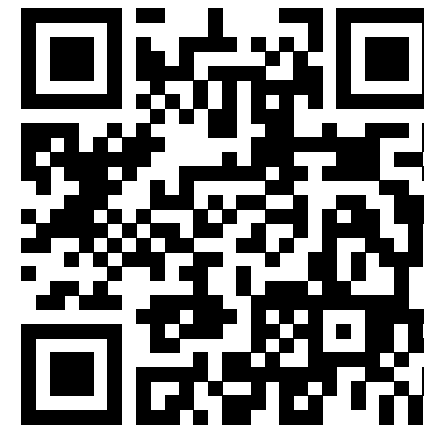


Social Media

- Join the MATLAB@KTH Facebook group
 - Stay up to date with all events being hosted
 - Posts about MATLAB & Simulink tips, resources etc.
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- Instagram: @matlab_kth
 - Occasional memes
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- Join F.dev!
 - <https://f.kth.se/namnder/kommunikationsnamnden/fdev/>



<https://facebook.com/groups/MATLAB.KTH>



https://instagram.com/matlab_kth

Workshop

Suggested topics:

- Simulink Onramp
- Launch MATLAB and open Simulink
- Form a team
 - Maybe with other students here?
- Register to the competition: <https://www.mathworks.com/academia/student-competitions/minidrones/nordics-baltics.html>
- Install the Parrot minidrone support package

