The Volocopter

by e-volo GmbH

Florian Reuter | NASA ODM Workshop | Arlington, VA | March 9th, 2016
Link to the video

Below is the **link to the video** that was presented during the workshop:

https://www.youtube.com/watch?v=YkiyiSdZzXk
The Volocopter will revolutionize urban mobility
Revolutionary simplicity in piloting, unprecedented safety and absence of emissions

**Simple**

» Automatic flight stabilization
» Operation of VTOL\(^1\) via single joystick
» Significantly reduced piloting skills required

**Safe**

» Multiple redundancy in all critical components and networks
» Significant reduction of human errors
» Full aircraft emergency parachute

**Green**

» Purely electric
» Significantly reduced noise pollution

1 Vertical take-off and landing vehicle
23.03.2016 © e-volo GmbH
The Volocopter already masters a host of fully automated maneuvers

**Simple: Integrated technology features**

- **Automatic Attitude Control**
  - $h_1 = h_2$
  - $x$ = const.
  - $z$ = const.
  - Crosswinds and turbulence automatically compensated

- **Automatic Altitude Control**
  - $h$ = const.

- **Automatic Position Hold**

- **Automatic Landing**
  - Gentle touchdown upon pilot command
Aviation authorities have granted ‘permit-to-fly’ - first Volocopter sales planned for 2017

Upcoming activities

February 2016

Receipt of ‘permit-to-fly’ for the VC200

Certification process

» Final decision on aircraft class (existing vs. new)
» Elaboration of construction, operation and training requirements

Planned for 2017

Receipt of ‘Type certification’ for the VC200

» Type certification as German UL aircraft
» Start of production and delivery
» Geographic expansion of certification and commercial activities

Technical development

» Manned test flight program
» Final software code review
» Power unit optimization
» Preparation for series production
» Launch of marketing and distribution activities

We now commence our ‘manned test flight program’
The Volocopter enables new use cases in urban mobility

- **Private Ultralight**: E.g. Flight enthusiasts
- **Private Helicopter**: E.g. Private yacht tender
- **Emergency helicopter**: E.g. Private Swiss Rescue Service
- **Air shuttle**: E.g. Air Shuttle over Bosporus in Istanbul
- **Personal Aerial Vehicle**: E.g. Simpler licensing allows urban air travel by individuals
- **Personal Aerial Transportation System**: E.g. On-demand commuter network in Silicon Valley

1 Personal Air Transportation System; cp. to EU project MyCopter by Max Planck, ETH, KIT, DLR et al.
Wit technology advancing at a breath-taking speed, we view regulation as our biggest long-term challenge

Current challenges

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<tr>
<th>Fundraising</th>
<th>Power unit</th>
<th>Regulatory environment</th>
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<tr>
<td>» Raising new funds in the</td>
<td>» Electric propulsion still challenging due to capacity</td>
<td>Near-term</td>
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<td>coming months</td>
<td>and thermal issues</td>
<td>» Geographic expansion</td>
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<td>» Ongoing discussions with</td>
<td>» Selection process for suitable serial hybrid unit</td>
<td>of type certificate as a German ultralight</td>
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<td>investors worldwide</td>
<td>initiated</td>
<td>aircraft (Europe, USA, Asia)</td>
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<td></td>
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<td>Mid-term</td>
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<td></td>
<td>» Diesel motor</td>
<td>» Reduced pilot licensing</td>
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<td></td>
<td>» Gas motor</td>
<td>(and vehicle) process</td>
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<td></td>
<td>» Gas turbine</td>
<td>» Regulation on “mass air transport</td>
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<td></td>
<td>» Fuel cell</td>
<td>corridors” in highly populated areas</td>
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**R&D projects**

» Welcoming R&D projects in manned and unmanned space, if funded by third party

We aim to build a personal aerial vehicle for all of us – and be allowed to use it!
Thank you and stay tuned!