

ESA Earth Observation ϕ -Week, November 14, 2018

AlphaLink

The next-generation High-Altitude Platform



Inventor of AlphaLink



Alexander Köthe, M.Sc.

Aerospace Engineer, Private Pilot
Ph.D. in Flight Mechanics and Flight Control

Project Management



Dr. Daniel Cracau

Former UN Staffer
Ph.D. in Strategic Market Interaction

DISRUPTIVE TECHNOLOGY

AlphaLink has developed an unmanned

Multibody Aircraft and Method for operation thereof (*patent pending, January 2018)

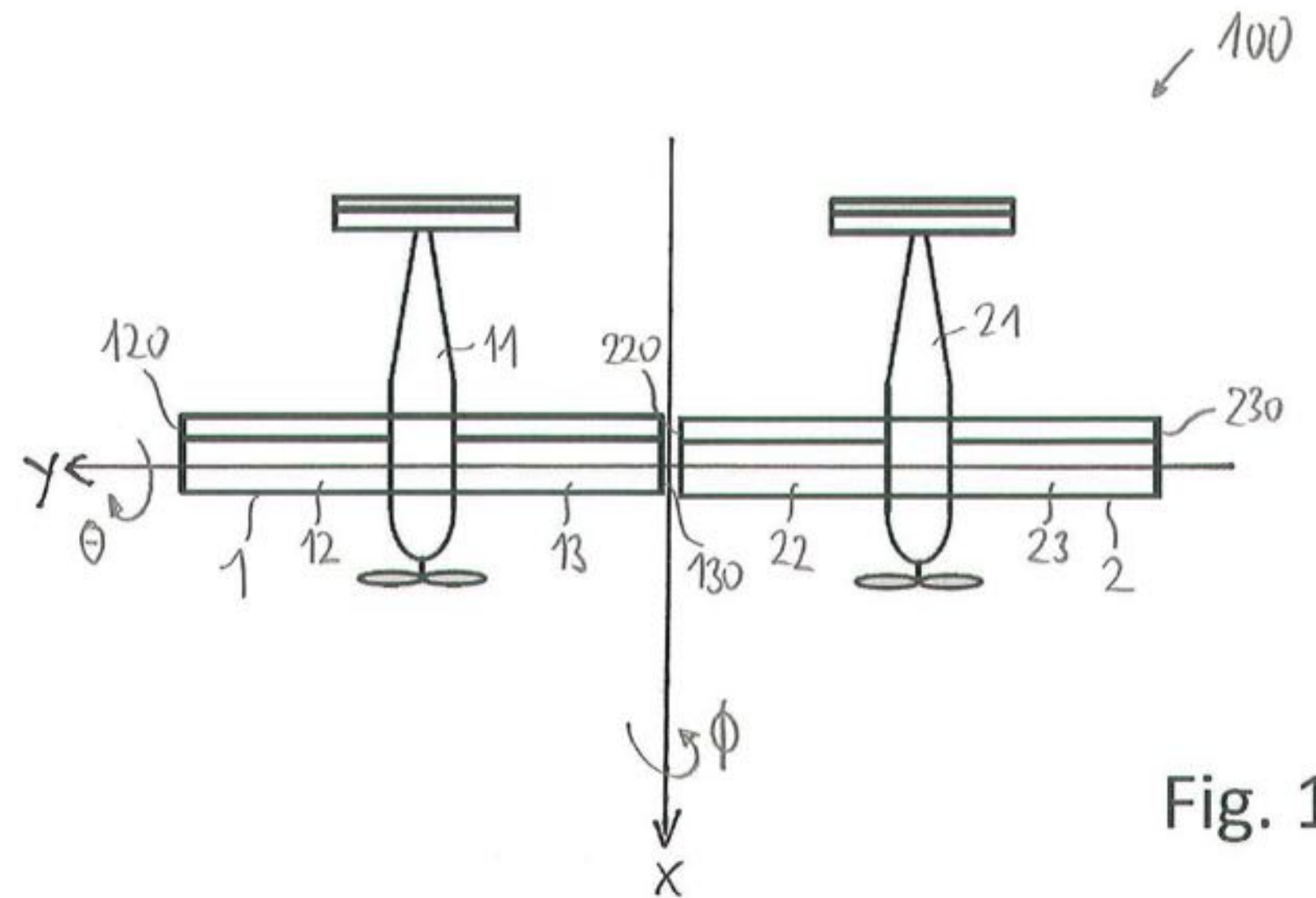


Fig. 1

Mechanical joints at the wingtips yield a

High-Aspect-Ratio Wing with Increased Payload Capacity

HIGH-ALTITUDE PLATFORM (HAP)

Model AlphaLink X

Number of **Aircraft: 10**

Total **Wingspan: 215 m**

Payload Capacity: 450 kg

Operational **Latitude: 40° N/S**

Continuous **Operation: 365 Days**

AlphaLink X is powered by solar energy and allows flexible mission rescheduling and maintenance work during flight.



Operating at altitudes of 20 to 30 km,
AlphaLink X will provide

**Broadband Communication &
Long-Term Aerial Monitoring**

DEVELOPMENTS

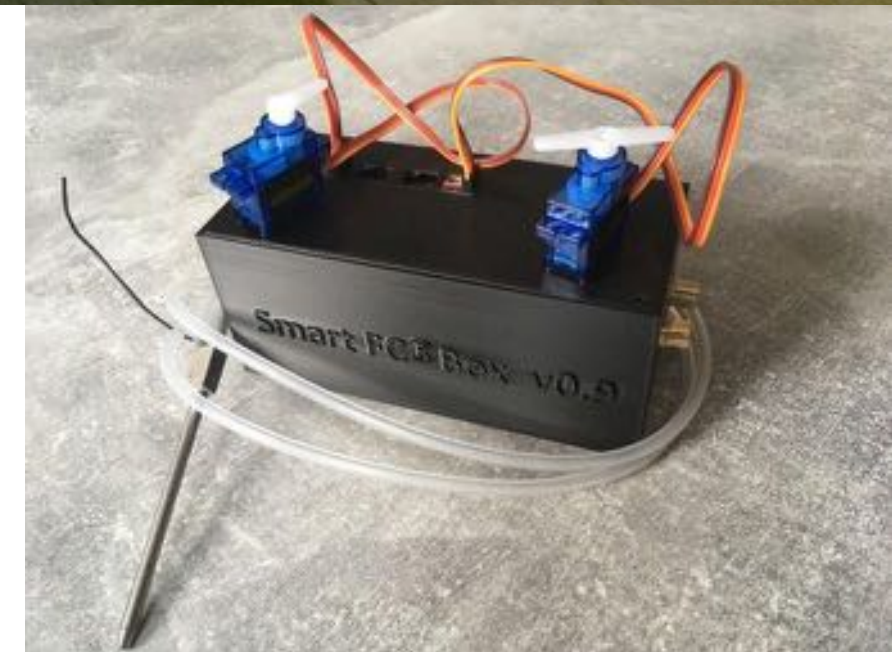
The wingtip-coupling is achieved through a

Mechanical Joint with 2 degrees of freedom



The flight controller
has been integrated
in the

Smart FC[®] Box

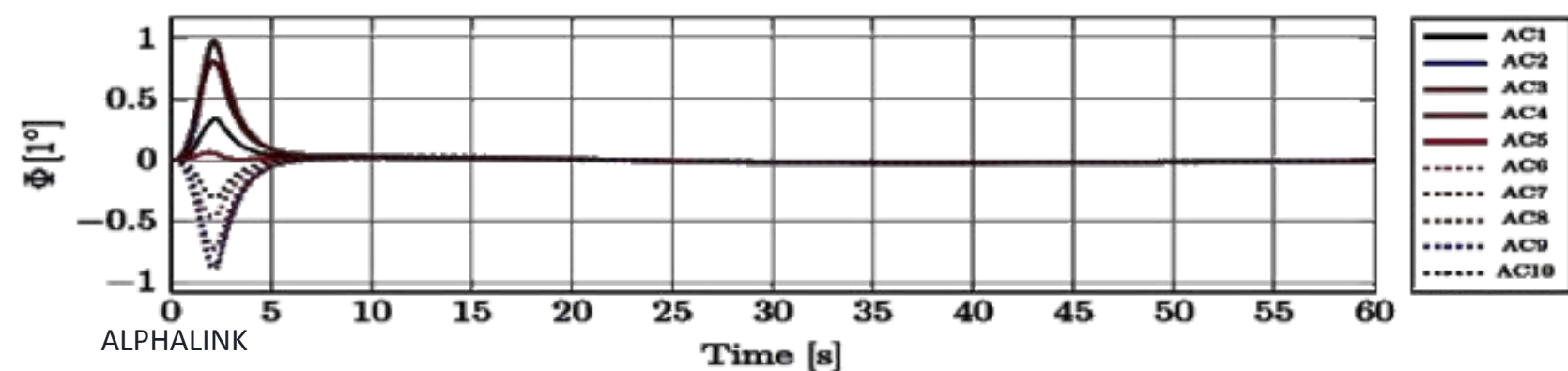
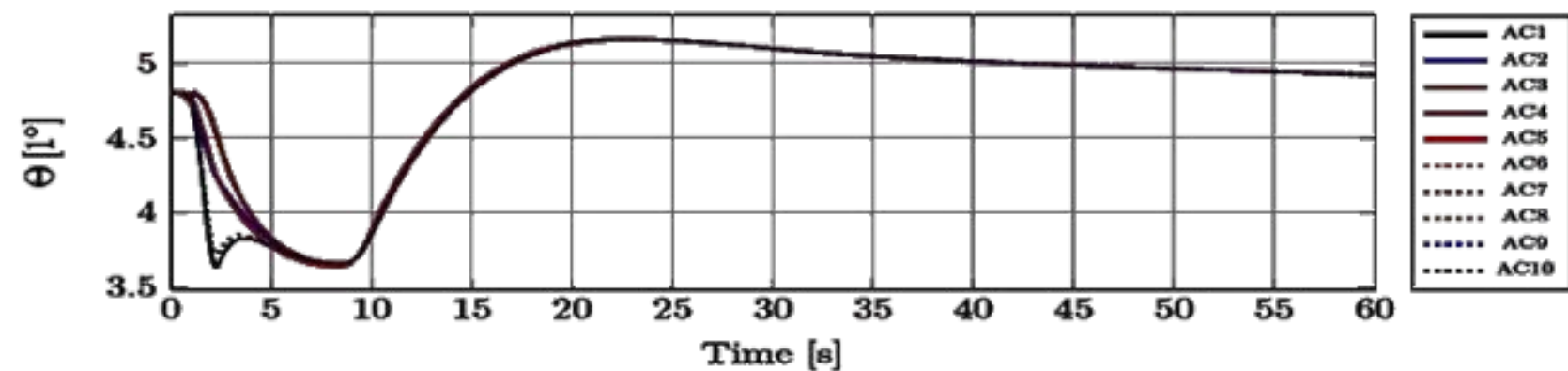


TEST CAMPAIGNS

On June 21, 2017, AlphaLink conducted a

Closed-Loop Flight Test

with three connected aircraft
at *Strausberg Airport* in Berlin (GER).



ALPHALINK

The flight control laws have been validated in

Fully Non-linear Simulations

SMALL-SCALE APPLICATIONS

AlphaLink is planning to cooperate with

photogrammetric companies

that currently use manned aircraft
for their data collection.



Practical demonstration is planned to follow the

**prototype development (25 kg):
18 – 24 months**



DRONE HERO EUROPE 2018

On April 11, 2018, AlphaLink was awarded

Innovative Drone Hero Europe

out of participants from
13 European countries
at *Commercial Expo UAV Europe*
in Amsterdam (NL).



OUR VISION

With the new HAPS approach we want to

Bring back Europe's Lead



AlphaLink thanks





Dr. Daniel Cracau

Daniel.Cracau@ProjectAlphaLink.com
+49 173 630 1934

Get connected!

www.AlphaLink.space

Project **AlphaLink**