

# Aquila's first flight: A big milestone toward connecting billions of people

Facebook is accelerating its efforts to bring internet connectivity to the four billion people around the world who are not yet online, with the goal of contributing to prosperity, progress and development around the globe. The company's Connectivity Lab has reached a major milestone in this ambition with the first full-scale test flight of Aquila, an unmanned solar-powered airplane that can be used to bring affordable internet to hundreds of millions of people in the hardest-to-reach places.



Aquila flight

Internet access can offer life-changing opportunities, information, and experiences, but 1.6 billion people today live in remote locations with no access to mobile broadband networks. Facebook is building new technologies like Aquila to help address this challenge.

When complete, Aquila will be able to circle a region up to 60 miles in diameter, beaming connectivity down from an altitude of more than 60,000 feet using laser communications and millimetre wave systems. Aquila is designed to fly for up to three months at a time.

The aircraft has the wingspan of an airliner, but at cruising speed it will consume only 5,000 watts — the same amount as three hair dryers, or a high-end microwave. Facebook has flown a 1/5th-scale version of Aquila for several months, but this was the first flight of the full-scale aircraft.

This test flight was designed to verify the operational models and overall aircraft design. To prove out the full capacity of the design, Facebook will push Aquila to the limits in a lengthy series of tests in the coming months and years. As encouraging as the first successful flight is, there is still plenty of work to be done.

To reach the goal of being able to fly over a remote region and deliver connectivity for up to three months at time, Facebook will need to break the world record for solar-powered unmanned flight, which currently stands at two weeks. This will require significant advancements in science and engineering to achieve. It will also require Facebook to work closely with operators, governments, and other partners to deploy these aircraft in the regions where they'll be most effective.

Facebook's mission is to connect the world and with their growing team of aerospace, optical physics, RF communications and other world experts, and existing relationships with the technology community, telcos, governments, and communities that use Facebook, the company is uniquely positioned to do this work.

To date, Facebook's connectivity efforts, which include initiatives like Free Basics, are estimated to have brought more than 25 million people online who wouldn't be otherwise.

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