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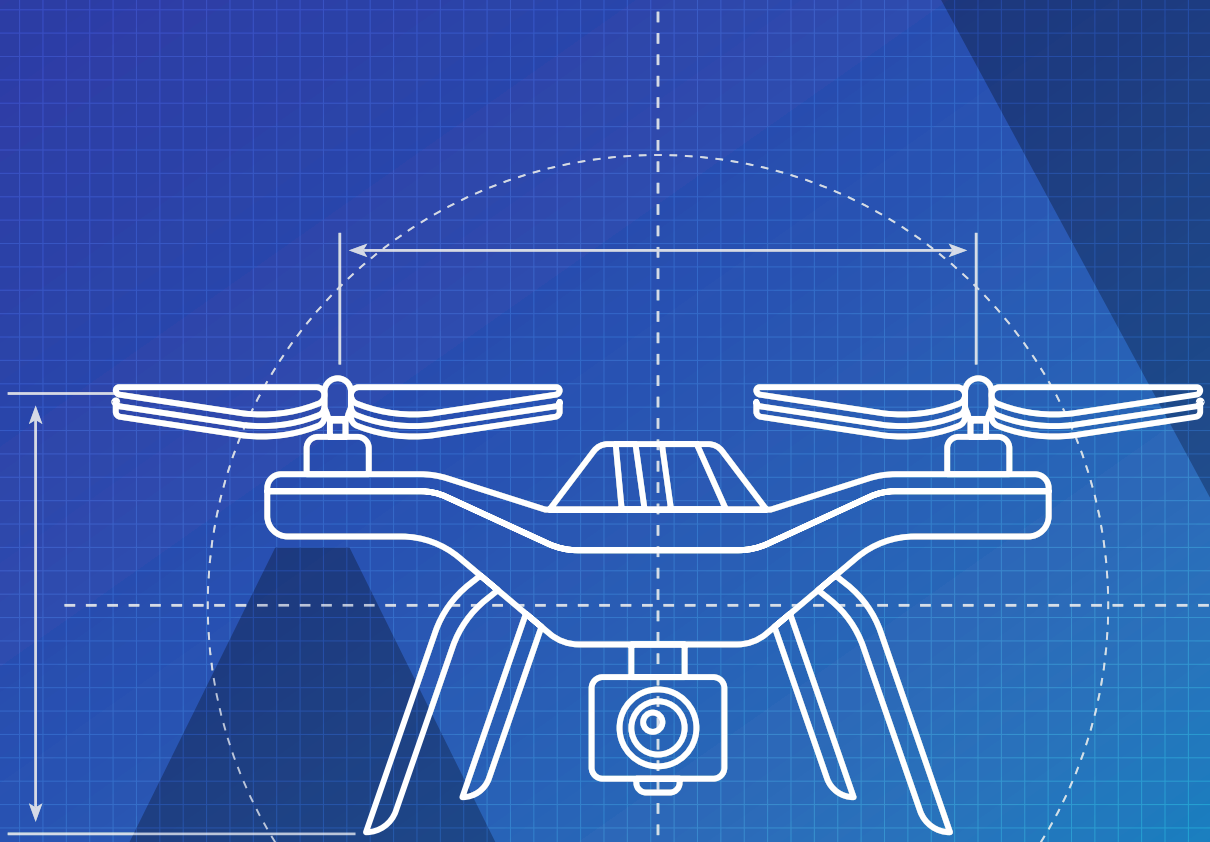
Building a future we can all trust



THE BVLOS BLUEPRINT

Making Drones Work for Your Community

Getting to BVLOS: Connecting Communities

For many local communities, the highest value use cases for commercial drones – **think package deliveries, infrastructure inspections, precision agriculture, search and rescue efforts** – require the drone to fly beyond the visual-line-of-sight (BVLOS) of the operator.

But without any shared-use infrastructure to connect these drone flights to a common system, **these use cases remain grounded.** This is not only inhibiting the drone industry, but it's also preventing local communities from benefiting from industrial and commercial drone work.

Thales works with state and local governments to architect solutions and commercialization models for advanced drone enablement. **The BVLOS Blueprint** outlines the steps that you can take to unlock the economic and social benefits of drones for your community.

What is BVLOS?

BVLOS stands for Beyond Visual Line of Sight. It describes drone flights that take place outside of the visible range of the pilot. When flying BVLOS, the drone pilot uses a Ground Control Station (GCS) to ensure the safety of the operation.

The BVLOS Blueprint: Step by Step

1. Understand Your Needs & Context.

We start by asking a lot of questions – about your drone use cases, regulatory environment, and even socioeconomic data to truly understand your needs, interests, and priorities for sustained operation.

2. Develop a Concept of Operations (ConOps).

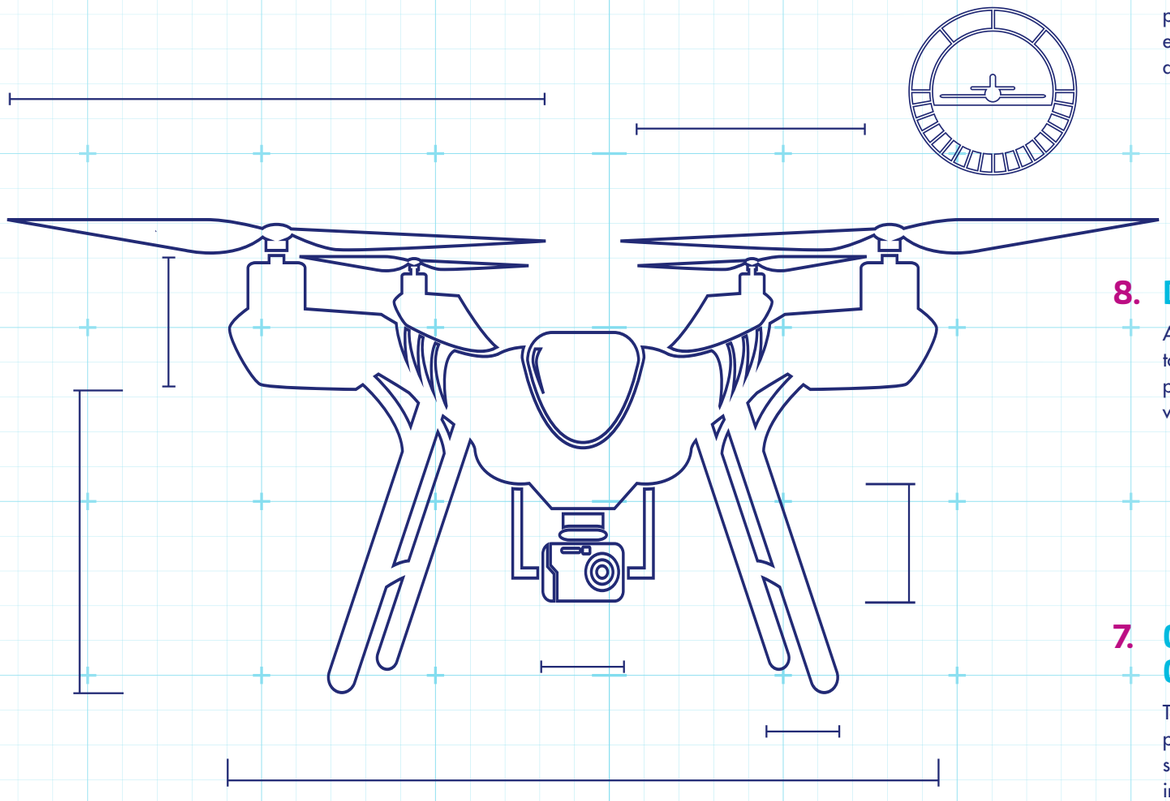
We partner with you to identify stakeholders and define the service needs and characteristics for all users. That includes business requirements, technical specifications, and risk assessments.

3. Evaluate Existing Infrastructure

We evaluate existing physical and digital infrastructure to support the proposed ConOps. This includes a thorough analysis of existing technology development and maturation levels.

4. Architect Your Solution.

Thales is a Systems Integrator. We bring together a seamless solution that incorporates best-in-class Thales and partner technologies for an integrated, efficient, and secure end-to-end system.



5. Leverage Our Best-in-Class Partner Ecosystem.

We evaluate local, national, and global providers to come up with the right mix of capabilities that fulfill the ConOps.

6. Build Your Business Case.

Our team brings deep experience in operationalizing systems that are not only economically viable, but that deliver value and build vibrant communities. Together, we'll create an enduring capability that brings benefits to local communities.

7. Consider Project Scope & Geography.

Together we'll deliver a master plan that details project phases, timing, and scope. Thales supports system design, deployment, and ongoing support, including activities, deadlines, and equipment needs.

8. Deploy a Pilot Project.

A pilot project lets us validate assumptions and benefits to all participants. We'll establish basic drone mission planning and approvals within a limited scope to validate the ConOps and ensure regulatory compliance.

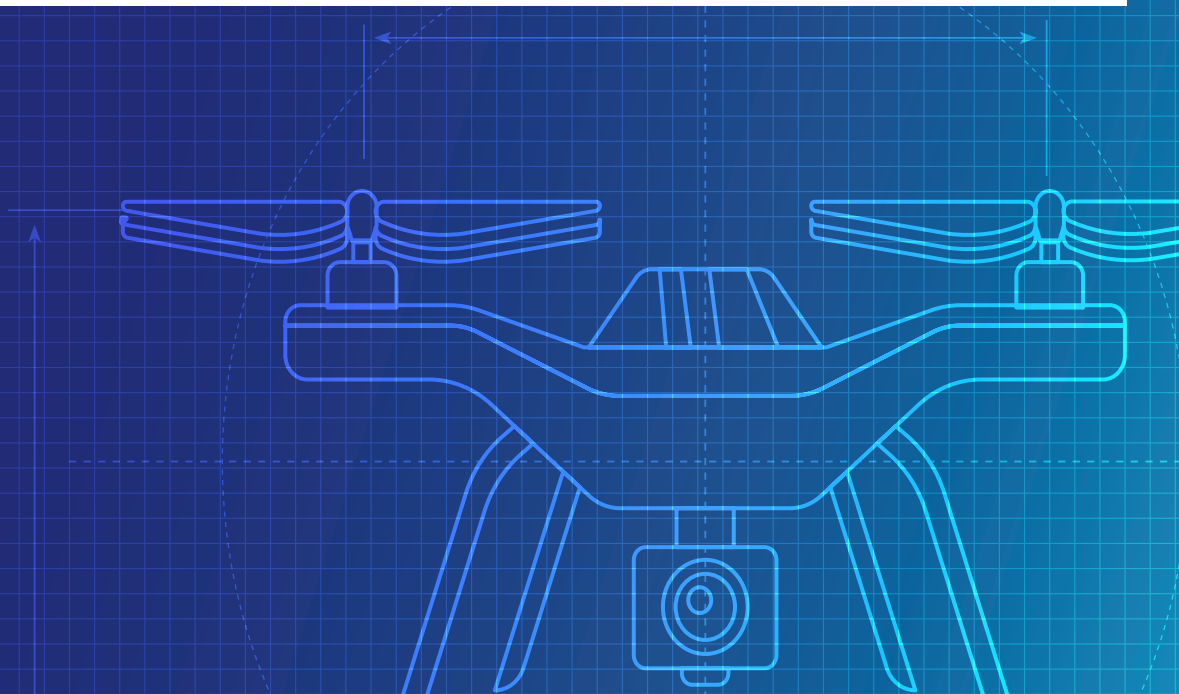
9. Enhance, Expand, Improve.

Using feedback and insights from our pilot project, we'll develop a plan for responsible expansion, building out your UAS network according to your priorities.

Thales was chosen not only because of their **outstanding technical performance** and **innovative approach** to building this system, but because they provide the best long-term value to the state.

Thales shares our vision for what a partnership of this magnitude could achieve and for Vantis as the future of the UAS industry.

Jim Cieplak
Program Manager, Vantis



One Network for Many Operators:

How North Dakota is Making Routine Commercial UAS Flights a Reality

In Western North Dakota, state employees deploy drones to evaluate the safety conditions of gravel roads for oil trucks. The drones have proven safer, faster, and more efficient than the alternative: sending out employees to drive the roads themselves.

This is just one of several use cases tested throughout the state, where drones are performing beyond visual line of sight (BVLOS) operations that make life better for North Dakota residents.

North Dakota has a vision to make the state friendly to UAS business and innovation, through the development of Vantis, the nation's first statewide network enabling BVLOS drone operations. North Dakota solicited several systems integrators for the best technological solution to enable BVLOS flights, and in 2021 selected Thales as the long-term systems integrator for Vantis.

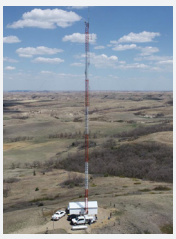
Incorporating physical and virtual infrastructure, North Dakota and Thales are making it simple and economical to perform safe, repeatable, and scalable commercial UAS operations on Vantis. North Dakota is poised to become an epicenter for commercial UAS activity.

As the systems integration partner for Vantis, Thales will deploy new communications and surveillance infrastructure in phases across the state. This infrastructure will be supported by a Mission and Network Operations Center (MNOC) that uses the State of North Dakota's fiber optic telecommunications network along with robust digital services deployed on cloud-based infrastructure to support operational resilience.

Vantis has supported more than 125 UAS and 25 manned aircraft test flights during the developmental stage. Operational testing will begin fall 2021. As the system matures, Vantis will continue its expansion across the state.

North Dakota: Cell Tower Sites for Vantis

Cell Tower 3: Fortem Radars



Arnegard: SkyStation (C2) & PingStation (ADS B)

North Dakota: Radar Site Construction for Vantis

Watford City Airport Site

Keene Site

Our Approach

Getting to BVLOS is a long-term project that requires significant investment and a shared vision for a fully integrated commercial drone capability.

Our phased implementation approach brings the benefits of drones to your community.

- Understand the need and context
- Develop a ConOps for priority use cases
- Build a safety case

- Evaluate existing infrastructure
- Architect a solution
- Leverage robust partner ecosystem

- Build your business case
- Ensure economic viability
- Deliver value to participants & stakeholders

- Consider project scope & geography
- Detail project phase, timing & scope
- Deploy a pilot project to validate ConOps

- Use feedback & insights from pilot project to expand responsibly
- Thales supports design, deployment & ongoing support

Are you ready to put drones to work for your community?

Let's talk.

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