JAMZ Initial Client Meeting - Karsten Lowe, Connor Harper, Jason Clapiz, Leo Tan

Interpreted needs are prioritized based on client statements/added emphasis. The key takeaways from JAMZ are that public safety, and package safety are the primary concerns, while the most important parameter to focus on for designing a system for JAMZ is accurate and consistent data collection.

Category	Client Statement	Interpreted Need	Priority (1-5)
Package Handling	Potential violent shaking from winch Drones are stable during flight There is failsafes in place for prematurely dropping food	Requires a sensor to constantly transmit the package's status for quality assurance Stability of the package 6 DOF Package safety - priority	5
Safety to general public	Looking to avoid flying over roads/ population centres Flying in rural communities at first/ only dealing with transport canada Population centres and Ottawa region deals with RCMP and National Defense Parachute and redundancy systems on board	Build to specifications outlined by Transport Canada Ensure systems on place are able to safely land the drone in the event of a failure Ensure flight paths avoid as many roads, parks etc. to ensure minimal risk of falling on the public and causing injury/ Crash landing procedure	5
Weight	10-15kg max cargo capacity 25kg max capacity of all components	Variable Adaptable (within constraints)	3
Safety of the drone	Drones are not capable of flying in winter or adverse weather conditions	New drones will be built eventually that will be able to fly in adverse wind conditions and possible snow.	3
Cost	Quality over cost	Data must be accurate, consistent and reliable	2

Data Collection	Has the food been violently shaken Temperature/Humidity of the package Consistent raw data Constant feedback to operator Visual Feedback Radio communication/4G LTE	Quality Assurance Sensors as close to the package as possible Visual feedback of the package Constant feedback Consistent data	5

Problem Statement:

JAMZ requires a system that continuously transmits accurate data regarding the status of the package, and ensures product quality is maintained until delivered to the customer.

Product and User Benchmarking:

Google's Project Wing:

- This drone doesn't have to land. Google uses a winch system to drop the package safely.
    - Comparable to JAMZ proposed winch design
    - Customers do not interact directly with the delivery drone, as there is no need to unclip or assist with the delivery of the package. The aircraft hovers around 7 metres (23 feet) above the ground and lowers the package to the ground slowly, attached to a tether.
- Home delivery of food, medical supplies, and groceries.
    - Very high customer satisfaction in remote areas
- Light energy-efficient design enables the drones to fly up to 70 mp/h (113 km/h).
- Wing aircraft are equipped with still-image cameras used for back-up navigation in the event GPS is unavailable. The camera's point downwards to identify terrain to inform the aircraft of its location.

Drone Delivery Canada:

- Commercial and Industrial application of drone deliveries
- First drone delivery company in Canada to become certified as a "Compliant Operator" by Transport Canada
- The drones operate autonomously while the proprietary FLYTE software monitors air traffic, weather, obstacles, and other elements along the way.
- offers real-time package tracking and delivery notifications, scheduling, a database of all shipments/waybill records, temperature monitoring logs for temperature-sensitive cargo, and maintenance logs of all drones including their components.
- Main comparable drone to JAMZ: ROBIN XL
    - Max Speed 105 kph
    - Max Range 60 km
    - Max payload: 11.3kg
    - Multi rotor VTOL Hybrid VTOL flight system
- Electric power plants
- GPS Based navigation system