Qualcomm

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Scaling 5G and AI for the next generation of drones

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Introducing

Qualcomm flight RB5 5G platform

World's first 5G and AI drone platform

Qualcomm Technologies driving transformation for industries

Sep 2015

Dec 2018

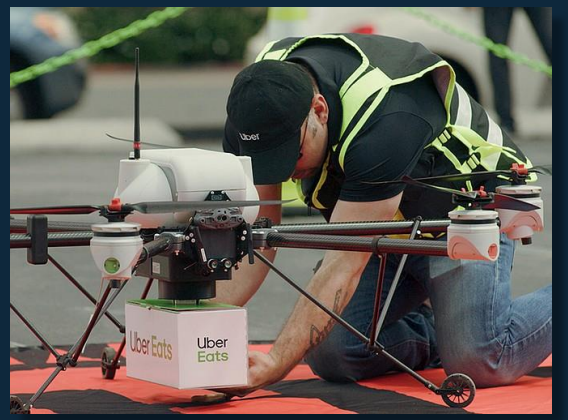
Qualcomm Flight™

Qualcomm Flight™ Pro

NASA JPL leverages commercial off-the-shelf technology from Qualcomm Technologies for the 1st powered flight by Ingenuity Helicopter on Mars.

Qualcomm Flight also on-board Perseverance Rover to manage and process the collected images.

Courtesy NASA/JPL-Caltech.



MODAL AI
ROBOTIC PERCEPTION

Built from Qualcomm Flight Pro architecture, ModalAI partnered with Uber Eats to test out meal-delivery using drone capabilities.

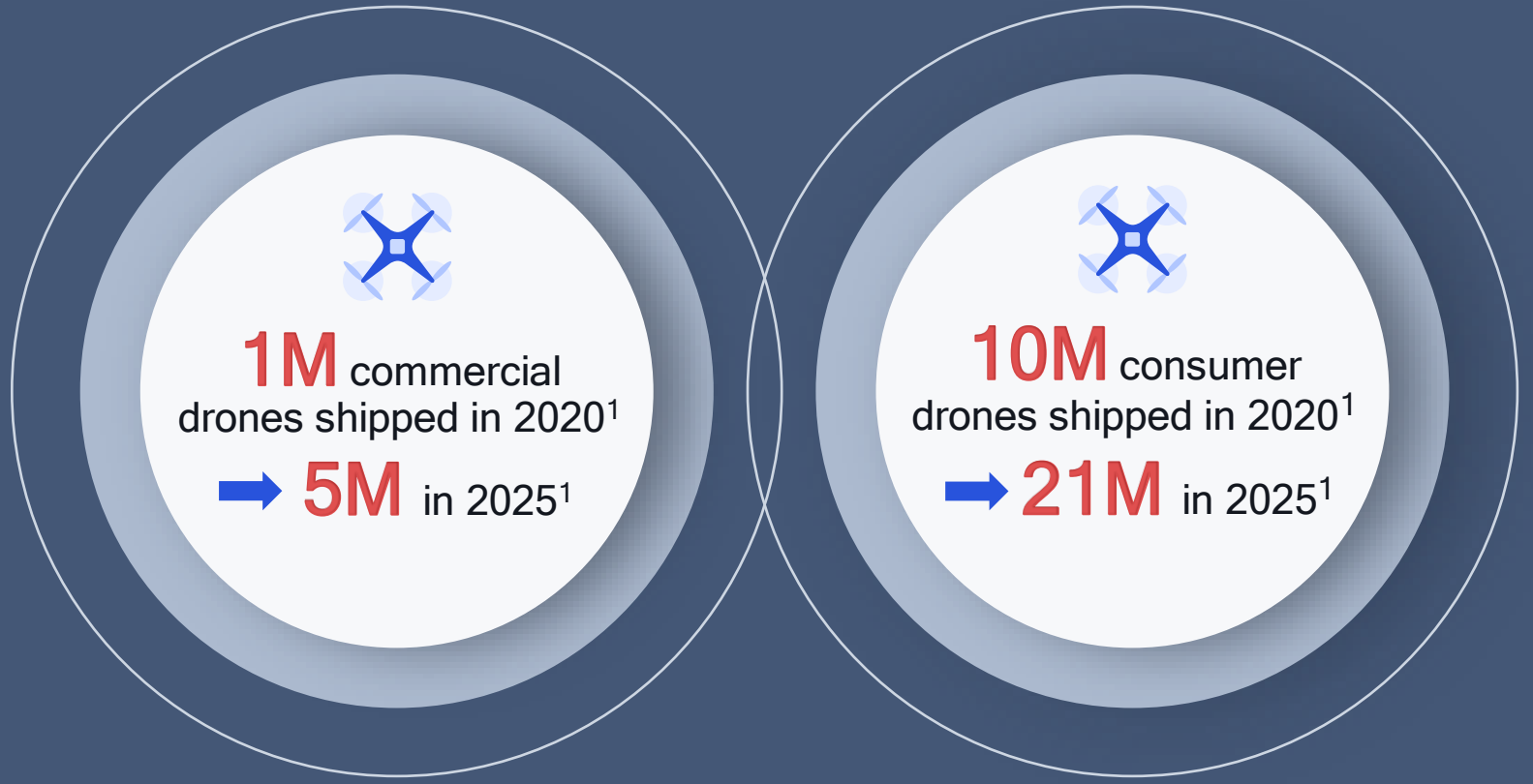
200+

drone and robotics ecosystem members

Drone industry

30% CAGR in commercial drones between 2020 - 2025[1]

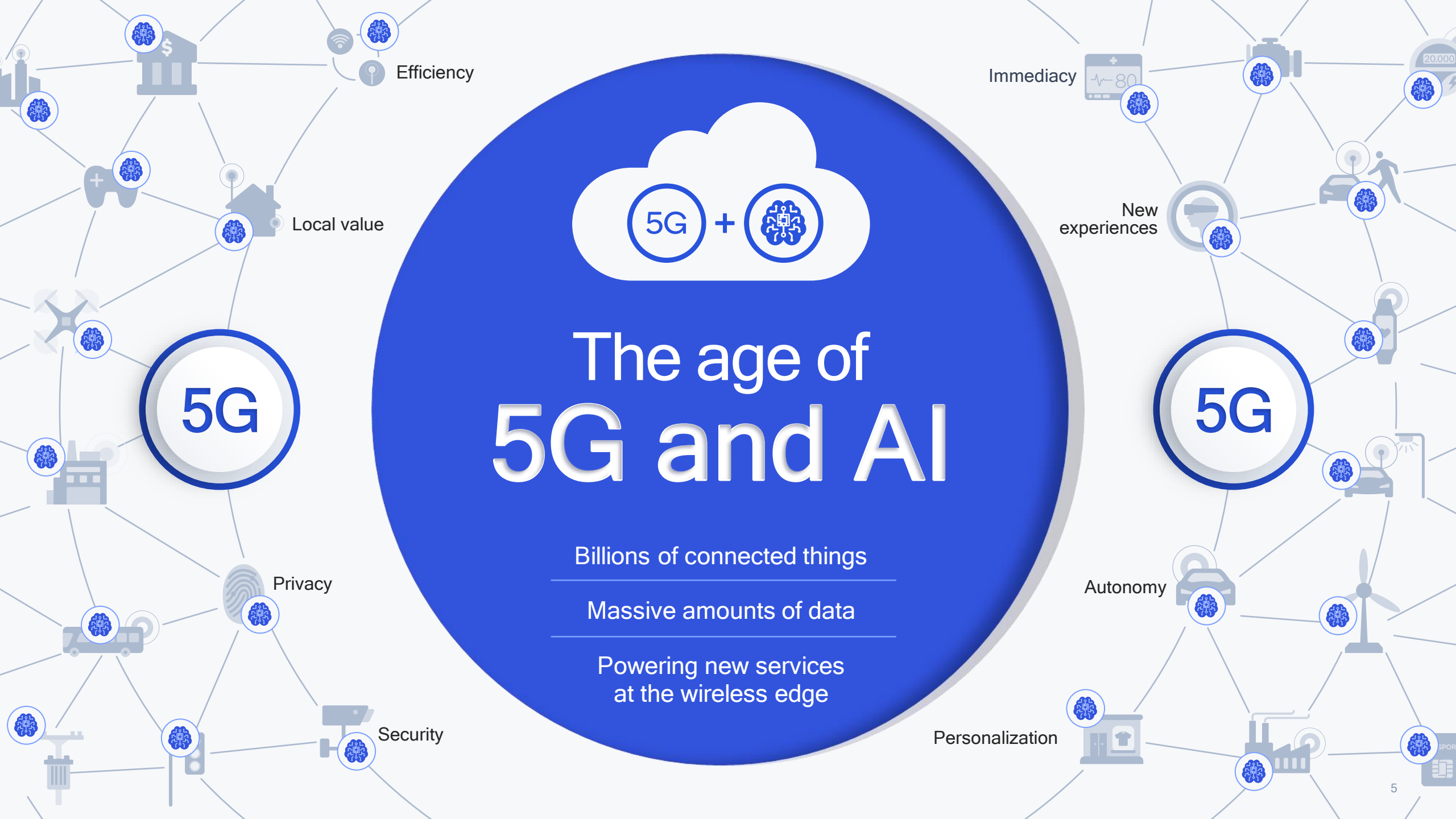
Tremendous growth across the board in drone applications & services



Asset inspection is a **15B** business[2]

Utility industry is **2.2B** business[2]

Source: [1]Strategy Analytics, 2020; [2]Boston Consulting Group, 2020


Efficiency
Local value
5G
Privacy
Security
5G + AI
The age of
5G and AI
Billions of connected things
Massive amounts of data
Powering new services
at the wireless edge
Immediacy
New
experiences
5G
Autonomy
Personalization

Qualcomm flight RB5 5G platform

Comprehensive Qualcomm Technologies for drones

High performance / integrated SOC
Optimized heterogeneous computing platform, at ultra- low power consumption and small form-factors with the Qualcomm® QRB5165 processor

Perception
8K30 & 4K120 cameras, EIS, digital zoom, horizon leveling, multi-camera concurrency

360 obstacle avoidance
Depth estimation, obstacle detection, mapping and VOA

Autonomy
Visual inertial odometry (VIO), path planning, GPS denied navigation, BVLOS, follow-me

Computer vision processor
Depth from Stereo, multi-object detection & tracking, digital gimbal

Flight controller support
Hard real-time control and high-fidelity sensor processing to help deploy your choice of flight controller

Security
Authentication, security link, trusted execution

Connectivity
5G/LTE, U2X, long-range Wi-Fi 6

HLOS
Ubuntu, Linux, ROS2, fast booting

Smart UAV controller capabilities
Miracast for low latency first person viewing (FPV), HDMI interface to external display

Enabling use cases

Film & Entertainment

Consumer flying cameras

Movies and news media

Real estate

Sporting events

Delivery

Package delivery

Transport of medicines and vaccines

Public safety

Emergency services

Cellular coverage for first responders

Search and rescue

Agriculture

Crop visual inspections

Automated planting

Livestock tracking

Inspection

Critical infrastructure inspection (e.g. cell towers, bridges)

Inspection of hard-to-reach assets (e.g. oil & gas, wind turbines)

How to get started

qualcomm.com/FlightRB5

Qualcomm developer network

Supporting all levels of development efforts to commercialization

- **Drone reference design**
  - Available for pre-sale 8/17 from ModalAI
- **Development kit**
  - Available Q4 2021
- **Qualcomm QRB5165** premium robotics processor (chipset, SIP, SOM)


IoT starts with
Qualcomm
5G Takes Flight

Qualcomm

Thank you

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