



**AGRI
AUTOMATION**

Grow Smarter

Agriculture Victoria Webinar

29th June 2023, presented by Cam Clifford

**AGRI
AUTOMATION**



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AUTOMATION**

Grow Smarter

**Drive profits
without driving the tractor.**

**AGRI
AUTOMATION**

Introducing G0track

- Technology developed in Poland, EU
- Grower focussed team, working to develop practical applications for positioning and radar systems in horticulture
- Extensively tested and refined on farms



Why GOtrack?

Drive once to set the path and let GOtrack do the rest.



**Simple and intuitive spraying,
mowing and mulching**



Works with your existing tractor



**Frees you up to focus on
difficult tasks**



Control from your phone



Overcome staff shortages



Safer night driving

Applications



**TRIMMING AND
PRUNING**



**SLASHING AND
MULCHING**



SPRAYING

GOtrack Range



VISION STEERING



AUTONOMOUS SOLUTION



- **ESPRAY COMPUTER**
- **REMOTE CONTROL**

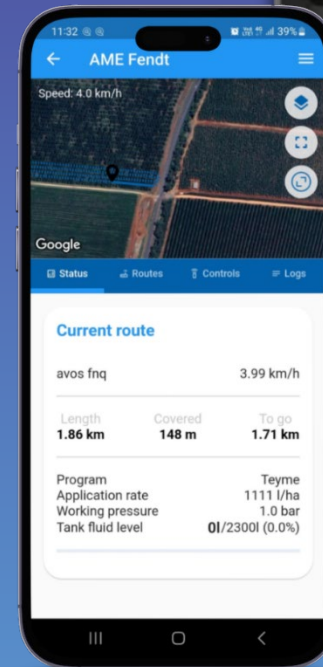
Line Assist Pro

- Automatic steering control, simplified
- Vision based technology, steers precisely without GPS/RTK or cellular connection
- No need for route mapping pre-work
- Assesses and adjusts to row and canopy conditions
- Setup for middle of row, or offset to either side



Auto Drive

- The most advanced system for **autonomous tractor operation**
- Simply drive once to record the path on the computer and your tractor will do the rest
- Each path is saved as a separate named program, so it's easy to pick the program for each day's conditions via the easy-to-use interface



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GoTrack® Auto
DRIVE

Video Links



Auto Drive Retrofit Kit, Components



Safety

Cab roof mounted:
2 Infrared Cameras and 1 RGB Camera

Uses AI to detect people or other objects in front of the machine

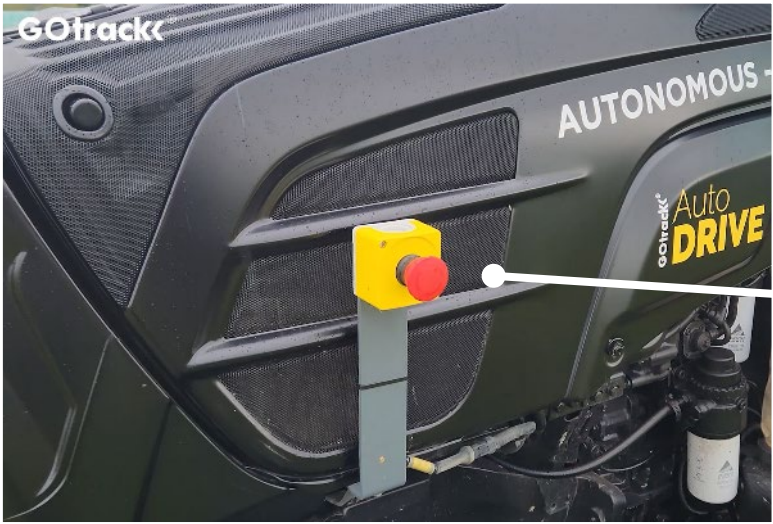


Safety

LIDAR....



Bump Bar, auto stop



Emergency stop buttons, both sides

Suitable for many makes





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**Carry, tow and scout.
Designed to work with people**

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Note: Following slides provided by Burro team
in the USA, calculations are in USD

Labor is the #1 challenge for farms & outdoor industries

40% decline in number of farm workers in California over past decade¹

\$15.11 average farmworker hourly wage, and rising²

40-50%+ of revenue goes to labor in permanent crops & nurseries, and rising³

The Solution: **BURRO**[®]

Proven in the Field: Hundreds of Burros in productive use worldwide with hundreds more shipping in 2023.

Plug-and-play, code-free autonomy that increases productivity today in conventional production environments

Works safely alongside people, with autonomy compatible across many environments

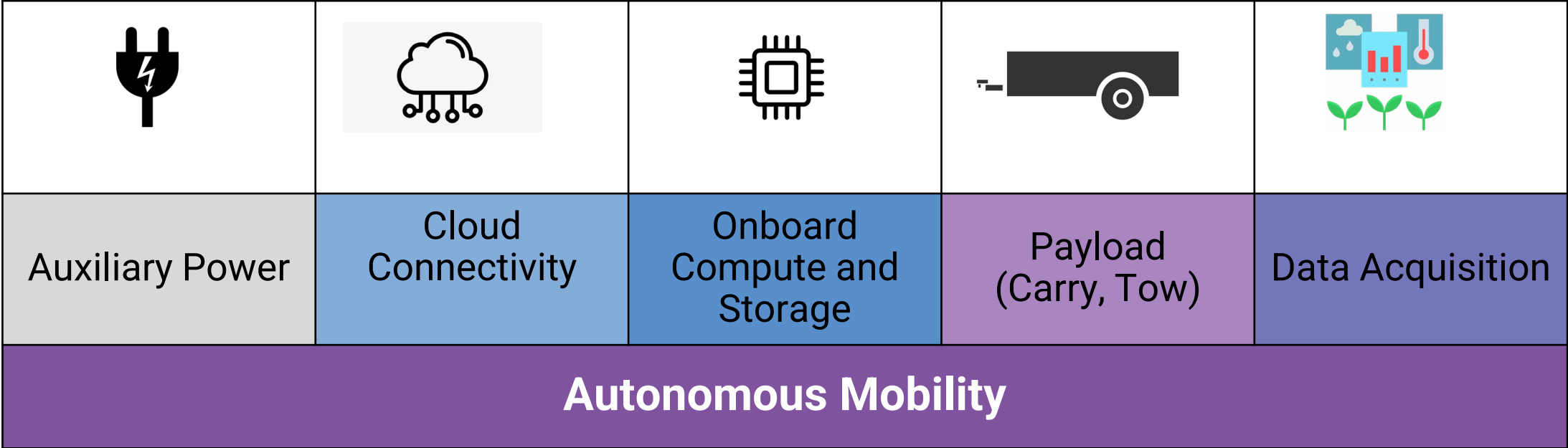
Built around computer-vision and AI, processing 2TB+ of data/hour

First step in a fully autonomous stack for work outdoors - *Autonomy that can carry, tow, scout, patrol, mow, attach, and serve as a platform for more*



Watch: <http://www.youtube.com/watch?v=HomKPsYGj1U>

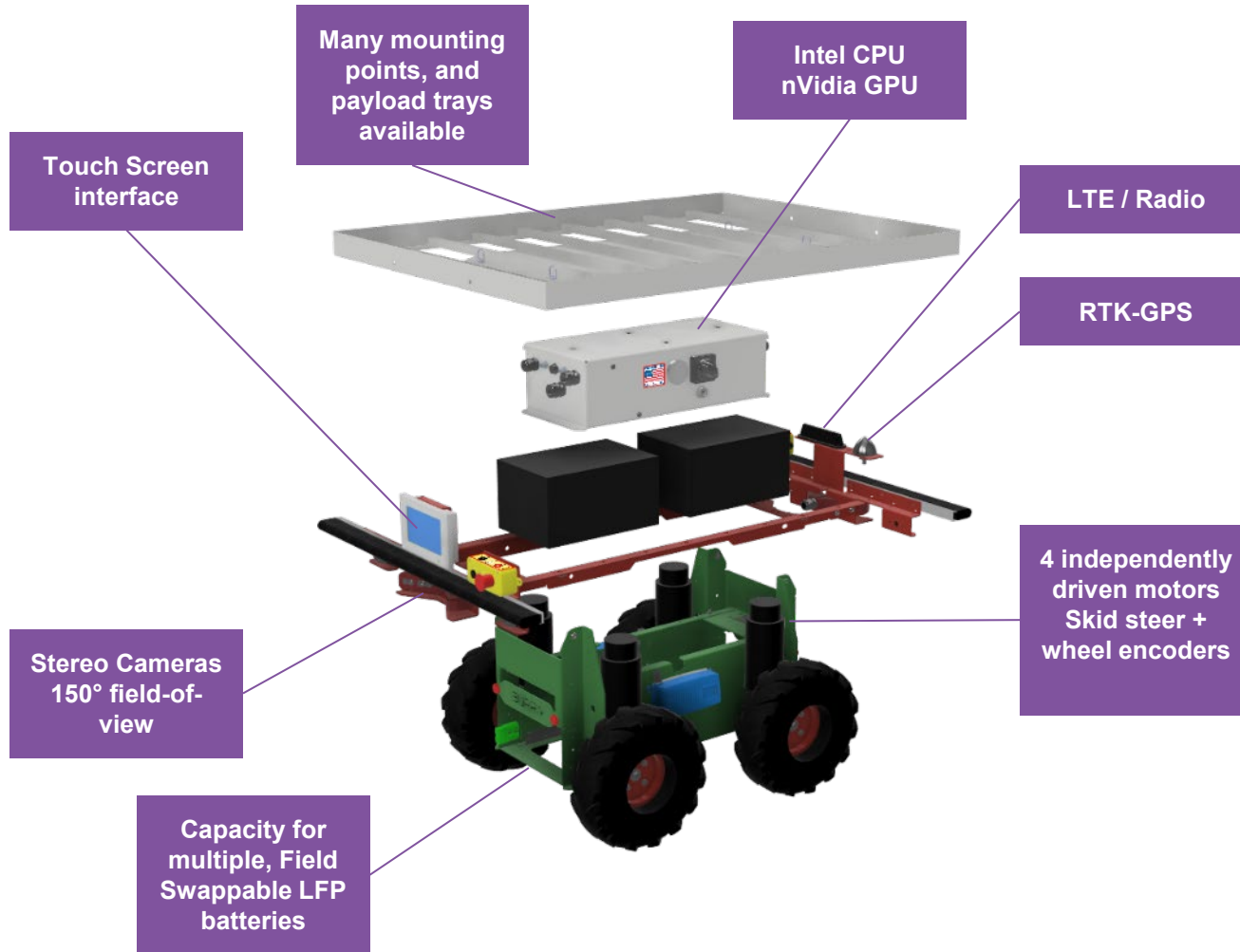
Saving Labor - as a Platform



If your application requires movement, power, and compute, Automating mobility with Burros can dramatically lower your application / use cost



Burro Specifications - Hardware



Sensors and Compute	
Cameras	12
GPS	RTK
CPU & GPU	Onboard (all computing onboard/local)
Storage	256GB+
Modem	4G LTE Modem
Cooling	Zero-ingress forced-air cooling system
Size and weight	
Weight, lbs. (kg)	420 (190)
Max Payload, lbs. (kg)	500 (226)
Max Towing, lbs. (kg)	2000 (907) *Expandable to 5000lbs w/ Towing package
Max Speed, MPH (M/S)	5 (2.25)
Length, Inches (cm)	54.7 (138.9)
Width, Inches (cm)	36.25 (92.07) - Narrower / wider also available
Height, Inches (cm)	27.3 (69.3)
Tires	14.5 x 5-6
Inner tubes for Tires	13 x 5-6
Power and Range	
Wheel Motors	5 horsepower
Range, miles (KM)	8(12.8). NOTE: Range depends on speed and load.
Batteries	[Standard] 2 x 100ah Lithium Ferro Phosphate (LFP), [Option] Expandable to 4X the standard [Option] Autonomous Changing
Battery Charge time	12 hours
Batteries Field Swap-able?	yes
DC Voltages on platform	12V, 24V (others available)
Charger	120V, 3.7amps from circuit, onboard

Labor Saving Autonomy for Permanent Crops & Nurseries



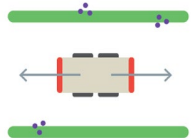
POP UP AUTONOMY™



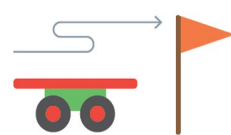
FOLLOW



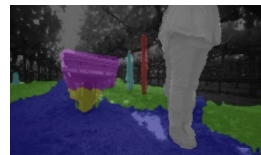
FOLLOW ROWS



INDOOR/OUTDOOR AUTONOMOUS ROUTES



AI-DRIVEN SCENE UNDERSTANDING



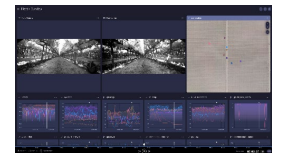
SCOUT ROWS



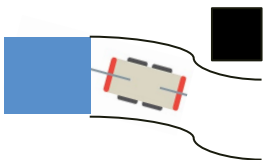
AUTONOMOUS ROUTES SHARED TO OTHERS



ONLINE DASHBOARD & DATA ONLINE



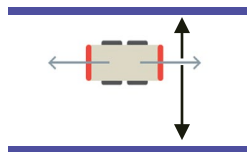
TOW/ ATTACHMENT MODE



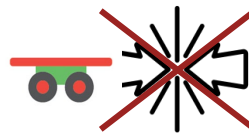
AUTONOMOUS ATTACHMENT CONTROL (MOWER/SPRAYER)



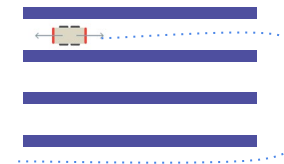
SETTINGS FOR FOLLOWING ROWS



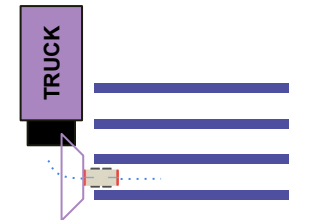
SAFE SET MANUAL CONTROL



SCOUT ROWS BEHAVIORS

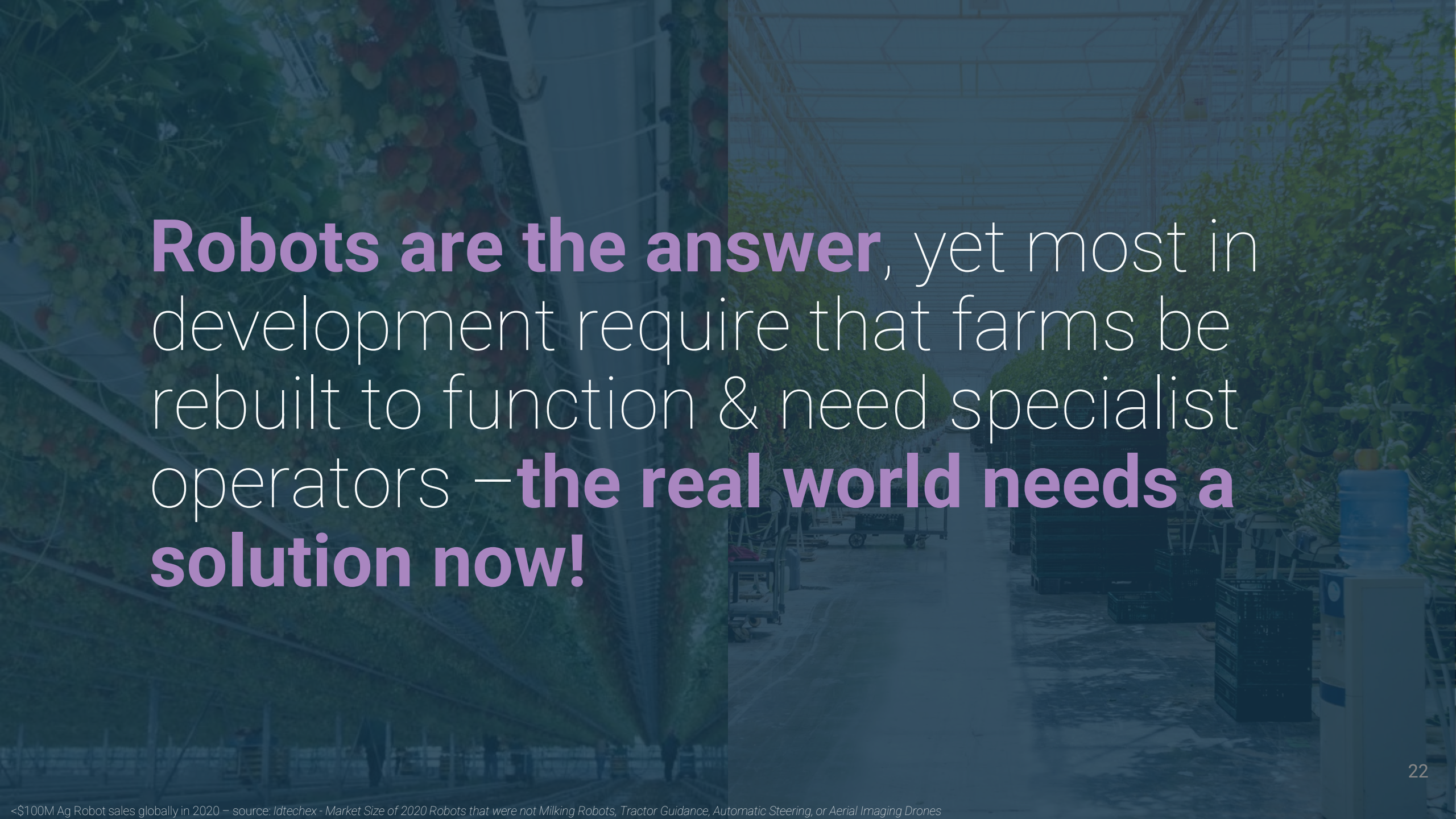


OBJECT SPECIFIC AVOIDANCE BEHAVIOR



Saving Labor - harvest assist in permanent crops





Robots are the answer, yet most in development require that farms be rebuilt to function & need specialist operators – **the real world needs a solution now!**

BURRO



Plug-and-Play Farm Autonomy

#goodburro | www.burro.ai

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GOtrackk[®]
Driving your profits

BURRO 



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