



Taking IoT Further

Company presentation

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# High-level introduction

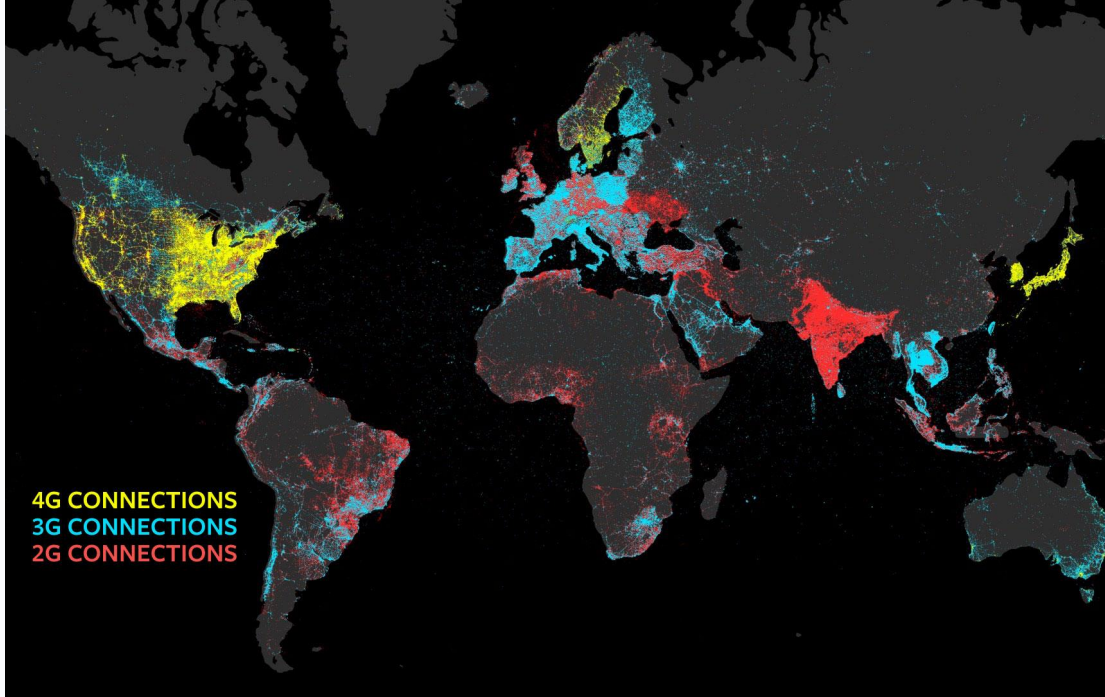


- 1 Huge IoT market with attractive non-urban niche for satellite coverage
- 2 Unmatched combination of technologies
- 3 Customer demand justifying launch of full 100 satellite constellation
- 4 Strong competitive edge driven by low capex, low operating cost and global coverage
- 5 Seasoned management team with strong track-record in Space and IoT

# Why satellite IoT? Global coverage at low cost!



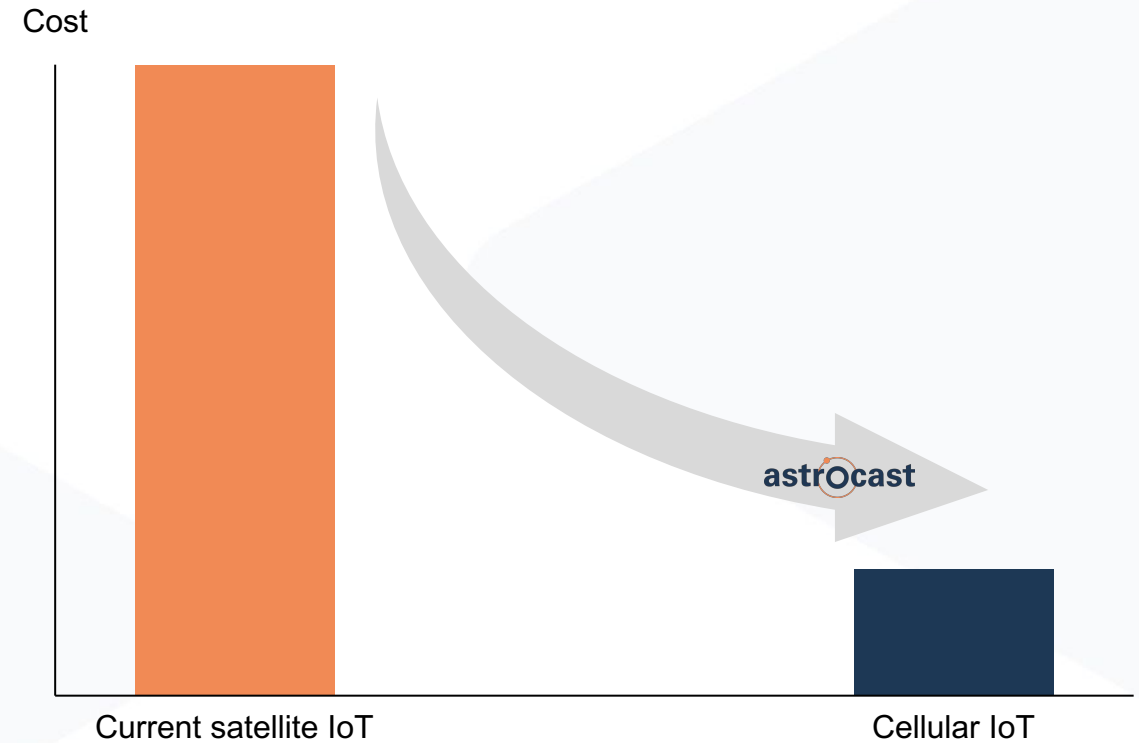
## Global cellular systems coverage overview



Source: Lora Alliance (2019) – Global cellular systems coverage & London Economics (2019) – Nanosatellite Telecommunications: A Market Study for IoT/M2M applications. LoRa Alliance analysis does not include data for certain countries, notably China

Cellular systems cover roughly 10% of the world's surface area;  
LPWANs cover only a fraction of this

## Astrocast reduces major cost gap between terrestrial and satellite IoT



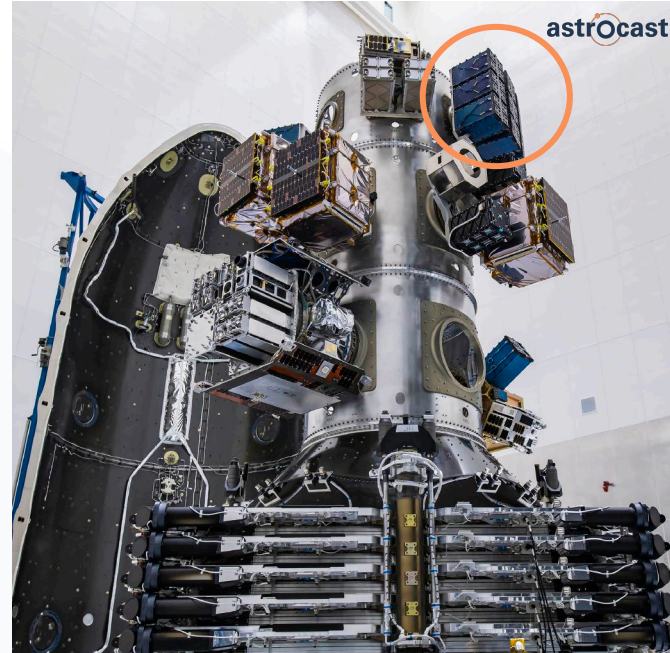
Astrocast racing down the cost curve unlocking massive IoT  
market opportunity

# Commercial launch in January 2021

First 5 commercial satellites launched in January followed by 5 more in June



24 January 2021 launch



30 June 2021 launch



Selected Tier 1 launchers and strategic partners of Astrocast





# Introduction to Astrocast



Disrupting the fast-growing satellite IoT market with a leading integrated solution

## At a glance

- Enabling low-cost satellite IoT communication through targeted 100 satellite infrastructure, fully designed and assembled in-house
- Secured global commercial access to L-Band, the most reliable and efficient spectrum for Satellite IoT applications
- Outperforming competition on power consumption, antenna size and cost



## Key partners



ASIC & M2M protocol



Established satellite operator



European Space Agency

Grants & technical validation



Ground station services



ASIC development



Production partner

# Key takeaways



Clear rationale for expanding our satellite constellation now

1	<b>We are an operating satellite company with proven technology</b>	 <ul style="list-style-type: none"><li>Global service in place with 12 satellites currently in orbit (of which two are demo satellites)</li><li>Targeting 20 satellites in orbit by 2022 and 100 by 2024, gradually improving response times (latency)</li><li>In-house satellite design securing cost and availability</li></ul>
2	<b>Why satellite? Global coverage!</b>	 <ul style="list-style-type: none"><li>We deliver low-cost M2M IoT communication with global coverage</li><li>Cellular systems / LPWAN cover only ~10% of the world's surface area</li><li>We do not target the broadband market or the urban IoT market</li></ul>
3	<b>Massive market opportunity and clear use cases</b>	 <ul style="list-style-type: none"><li>Expecting more than 5bn connected IoT devices by 2025</li><li>SatCom penetration expected to increase drastically once low-cost solutions are available</li><li>Use cases include asset tracking, asset monitoring, environment and safety</li></ul>
4	<b>Unique competitive positioning</b>	 <ul style="list-style-type: none"><li>Low-cost alternative to existing broadband satellite incumbents</li><li>First-mover in nanosatellites with key technology differentiation and superior client offering</li><li>Clients require low-cost data plans and low-cost modules with small size and low power consumption</li></ul>
5	<b>High degree of recurring revenues and customer stickiness</b>	 <ul style="list-style-type: none"><li>Targeting CHF 150m revenues by 2025 with ample capacity for further growth</li><li>Long-term gross margins of 70% with limited replacement capex requirements</li><li>Limited expected churn and high degree of recurring data plan revenues</li></ul>

# Vast number of use cases

Numerous sectors to benefit from low-cost satellite IoT connectivity





# Strong ESG profile

Actively supporting sustainability and poverty relief



## Humanitarian relief



**Wildfire detection, animal tracking, water monitoring & vehicle monitoring**

## Biodiversity



**Wildlife tracking, supporting biodiversity**

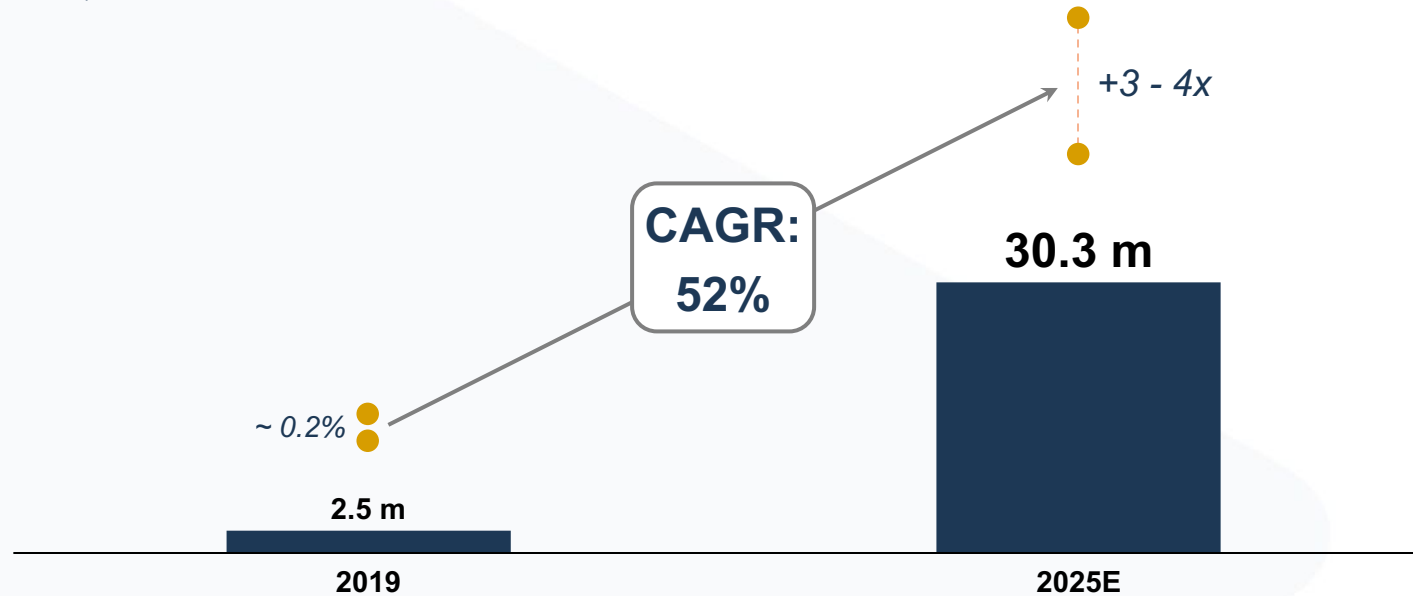
# Satellite connectivity required to deploy global IoT



Market to grow >50% annually

## Number of satellite IoT connections & penetration

● SatCom penetration<sup>2</sup>



Satellite penetration expected to increase 3-4x by 2025

- Number of cellular IoT connected devices market will increase massively:
  - Ericsson forecasts 5.2bn in 2025
  - Transforma Insight forecasts 3.8bn in 2025
- Cellular IoT is driving growth in satellite connected devices, as satellite connectivity will play an essential role in providing and unlocking true global coverage thus expected to grow in penetration
- ReTHINK forecasts that there will be 30.6m satellite connected IoT devices in 2025 – growing 52% annually from 2019
- Estimates varies significantly between market research firms

1. Cellular includes LPWAN (NB-IoT / LTE-M) access technologies as well as 2G/3G/4G/5G

2. Calculated as satellite IoT connections divided by cellular IoT connections

Source: Ericsson Mobility Report (2020), Transforma Insight, ReTHINK 2019 and company estimates

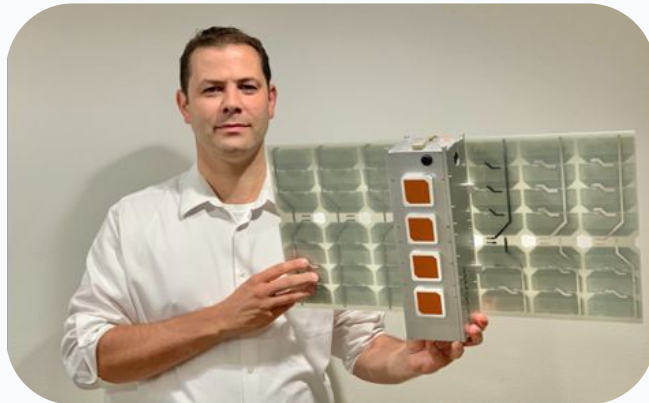
# Unmatched combination of technologies

Enabling low-cost connectivity and small-size devices



## In-house satellite design

- 100% internally designed; small-sized and low-power L-band antenna significantly reducing satellite weight and cost
- 3-5 year lifespan<sup>1</sup>
- 3-axis pointing system and state-of-the-art propulsion system securing position and altitude control and allows for collision avoidance maneuvers – reducing the risk of losing the satellite and creating debris in space



+

## Proprietary ultra-low power M2M modules

- Two different products addressing different needs;
  1. Module: Off-the-shelf solution for easy integration of satellite communication into existing applications using reliable communication standards



2. Chipset: For customers looking to embed RF app to own products (available from 2023)



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## Small form-factor Antenna

- Antenna is a critical part of the form-factor of the IoT system, and while modules can be miniaturized further, antennas offers less flexibility
- L-Band antennas are the most versatile in the market and can take the form of a patch in a similar way as a GPS antenna
- Satellite IoT solutions based on other spectrum such as UHF/VHF could result in a bulkier solution

Astrocast patch antenna



Astrocast antenna vs. competitor antenna



# Strong competitive edge driven by L-Band access



Astrocast is superior on key metrics such as cost, power consumption and size

## Commercial access to L-Band

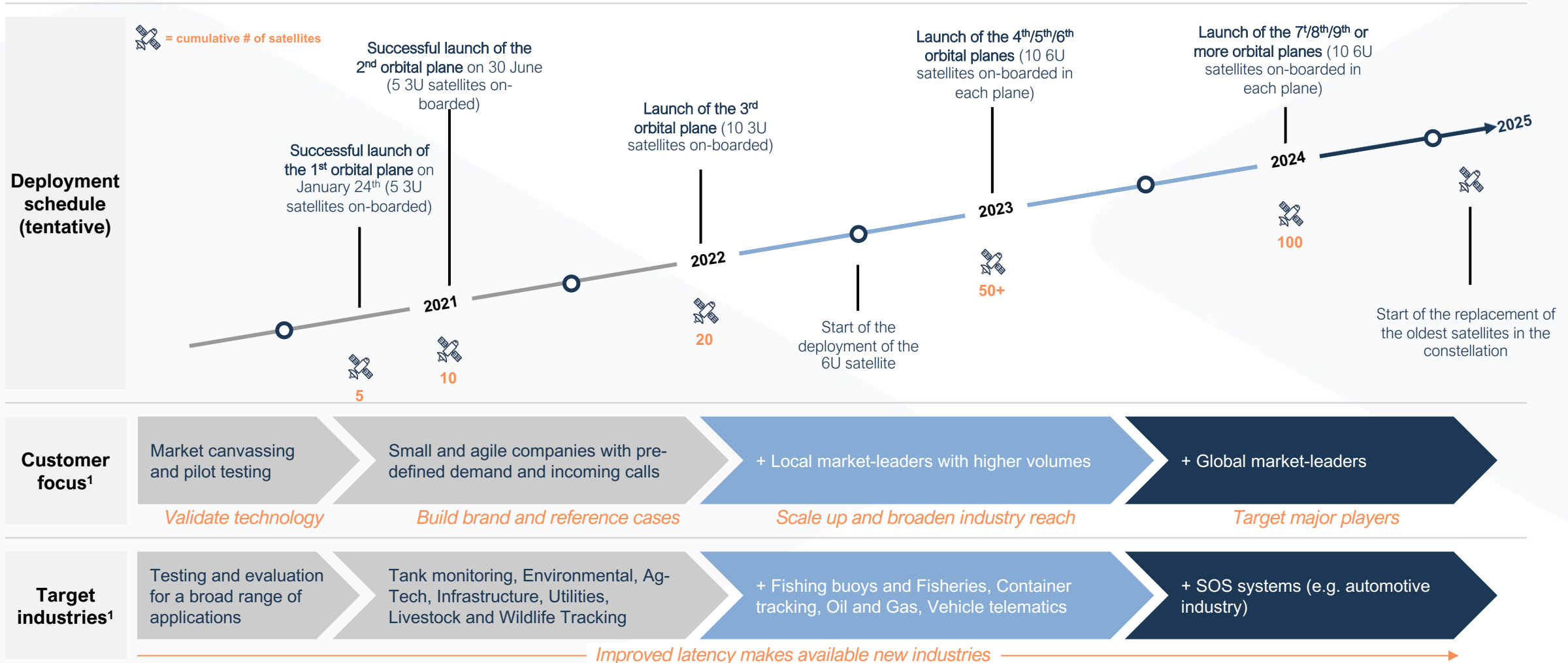
- The L-Band spectrum offers superior performance over more commonly used UHF frequencies, including
  1. Smaller antennas (reducing weight and cost)
  2. Less power consumption due to more efficient radio frequency components
  3. More reliable two-way connection (less interference or weather-related perturbation risk)
- L-Band access is secured via an exclusive strategic partnership with Thuraya, and is a major advantage for Astrocast in the satellite IoT industry



# Customer demand justifying full launch of constellation



Constellation to be scaled with increasing customer base



Note 1: Significant overlap expected



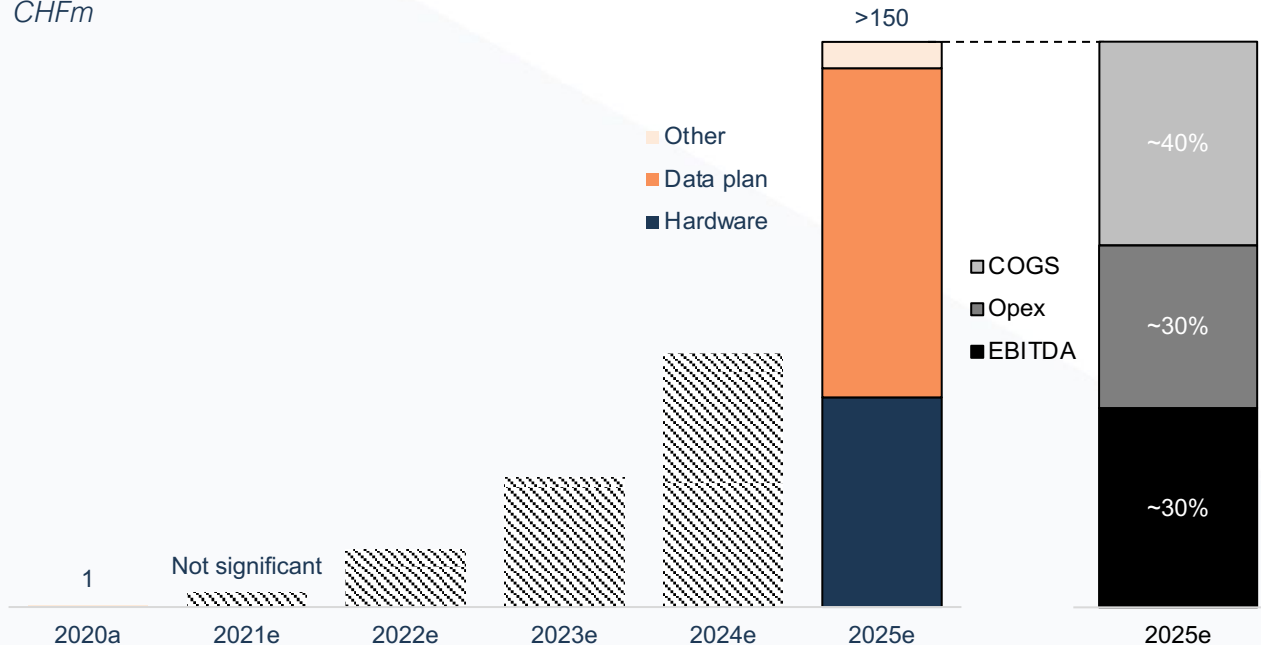
# Key financials

Astrocast expects revenue of more than CHF 150m in 2025



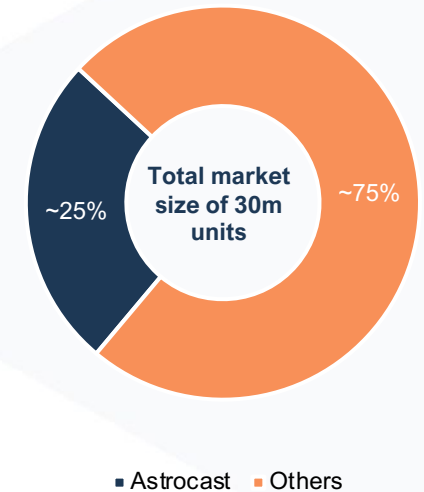
## Expecting strong growth towards break even in 2025

CHFm



- Long-term gross margins of 70%
- Long-term EBITDA margins of >50%
- Estimated capacity utilization 2025 (KB) of less than 25%
- Annual replacement Capex of CHF ~17m

## Market share 2025



- Astrocast expects strong revenue development driven by ramp-up of sales activities and continuous deployment of satellites
- As more satellites are deployed and latency is reduced, additional market segments becomes available and increases total addressable market

- By 2025 Astrocast estimates a market share of ~25% for connected satellite IoT devices

# Recurring revenues to increase by installed base



Device battery life creates a loyal customer base

## Products

### Modules & chips

#### Modules

- Off-the-shelf solution for easy integration of satellite communication
- Low-cost modules

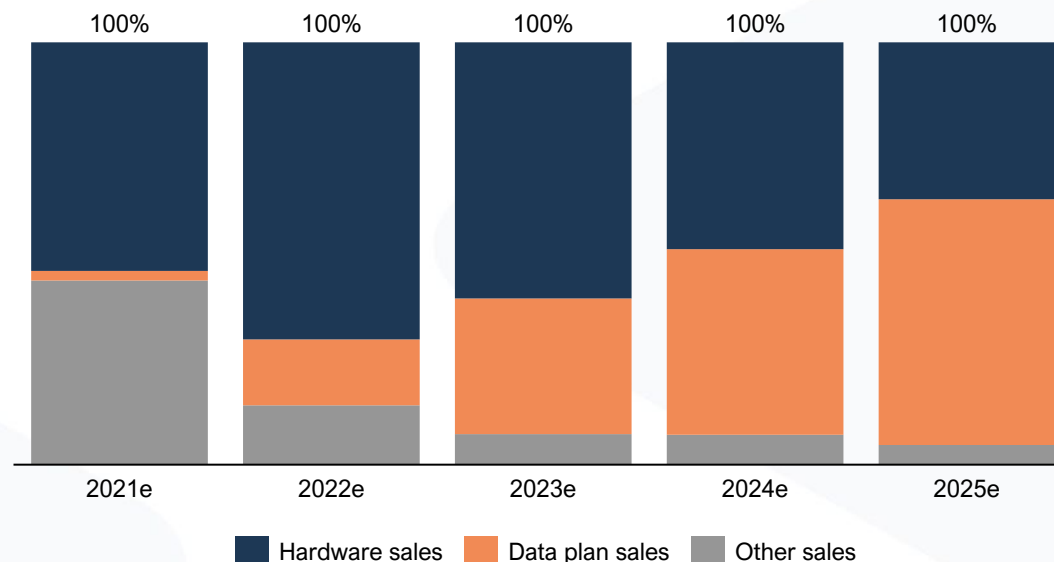
#### Chips

- For customers looking to embed RF app to own products (available from 2023)
- Very compact ASIC

### Data plans (estimated prices)

- Low-cost data plans
- Data plans will make up an increasing share of revenues going forward

## Revenue break-down by sales category



**~80%**  
data plan  
recurring revenue target

# Seasoned executive team with strong track-record in Space and IoT



Highly experienced and competent



**FABIEN  
JORDAN** 

CEO/FOUNDER &  
BOARD MEMBER

15-year experience in  
nanosatellite business,  
key engineer of the  
SwissCube project,  
worked on ESA  
ExoMars mission



**FEDERICO  
BELLONI** 

CTO/FOUNDER &  
BOARD MEMBER

10-year experience in  
satellite and telecom  
technologies having  
worked at Swiss Space  
Center on CHEOPS,  
CubETH,  
CleanSpaceOne,  
MicroThrust and  
SpaceCam projects



**KJELL  
KARLSEN** 

CHIEF FINANCE  
OFFICER

Former President of Sea  
Launch AG. Led its  
restructuring in 2010.  
Participated in 39 launches  
with a total payload value in  
excess of \$7 billion



**ANTONIO  
WALLER** 

VP OF  
GLOBAL SALES

15+ years of general  
sales, management and  
business development  
experience with a focus  
on B2B technological  
sectors, IoT, Fleet  
Telematics, M2M and  
Telecoms (Orbcomm in  
particular)



**LAURENT VIEIRA  
DE MELLO** 

CHIEF OPERATING  
OFFICER

18-year experience in  
international program  
management and  
business development for  
satellite  
telecommunications and  
solution providers within  
SITA and ESA



**MARCEL  
BARAT** 

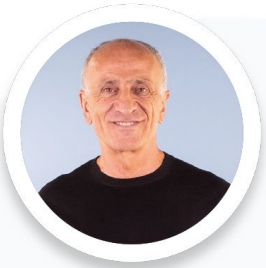
VP CUSTOMER SERVICE  
AND NETWORK OPERATION

30 years of senior management  
and customer service experience  
for Telecom service providers  
and premium vendors building  
strong worldwide organizations



# Senior and competent Board of Directors

Strong industry expertise



**JOSE  
ACHACHE** 

CHAIRMAN

Former Director of Earth Observation Programs at ESA and Deputy Director General for Research and Technology at CNES



**JAN EYVIN  
WANG** 

BOARD MEMBER  
*(to be appointed)*

Joined Wilhelmsen in 1981 and currently holds the position as Executive Vice President New Energy. Has held several senior positions in Norway and abroad.



**JON  
CHOLAK** 

BOARD MEMBER  
*(to be appointed)*

Seasoned venture investor and software professional with over 15 years of industry experience. Currently serving as Managing Director of Adit Ventures



**FABIEN  
JORDAN** 

CEO/FOUNDER &  
BOARD MEMBER

15-year experience in nanosatellite business, key engineer of the SwissCube project, worked on ESA ExoMars mission



**FEDERICO  
BELLONI** 

CTO/FOUNDER &  
BOARD MEMBER

10-year experience in satellite and telecom technologies having worked at Swiss Space Center on CHEOPS, CubETH, CleanSpaceOne, MicroThrust and SpaceCam projects



**ROLAND  
LOOS** 

BOARD  
MEMBER

Extensive experience in satellite and telecom technologies having worked as COO and EVP of ITC Global, founder of NewSat Communications as well as Director at Verestar



**YVES  
PILLONEL** 

BOARD  
MEMBER

More than 25 years of experience as Portfolio Manager and focusing on client acquisition at leading banks and private institutions including UBS and Pictet. Currently Senior VP Private Banking at Suntrust Investment





Taking IoT Further

Do you want to become an investor?  
Contact us: [investors@astrocast.com](mailto:investors@astrocast.com)