STARBURST

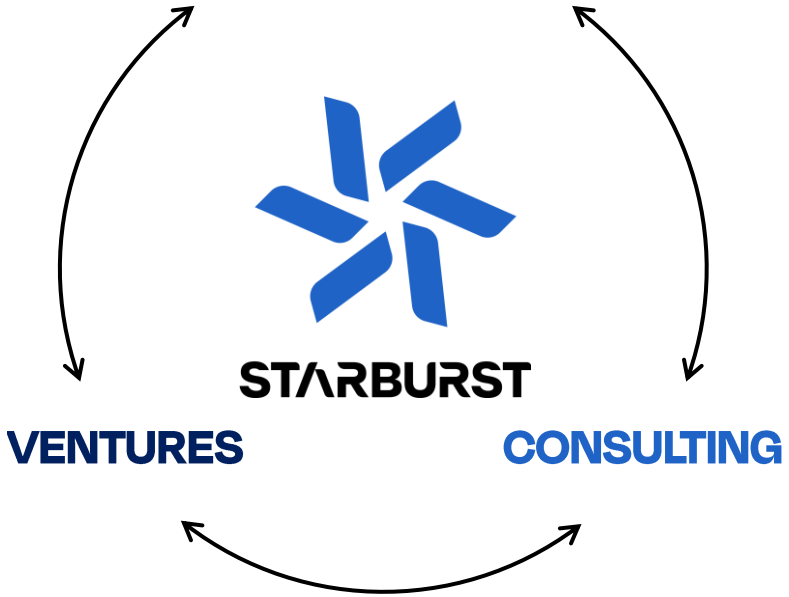
revolution .aero

7 lessons from investing in 140 aerospace startups

François Chopard
chopard@starburst.aero

Starburst combines three complementary activities to help our clients innovate, navigate and invest in the dynamic ecosystem of aerospace and defense

Starburst
Value Proposition



We explore and investigate emerging trends and technologies

We support growth strategies to open new markets

We accelerate innovation capabilities to unlock untapped value

We activate ecosystems to foster the emergence of new markets

Starburst has built an unparalleled network of A&D innovators across a diverse set of backgrounds, disciplines, and geographies

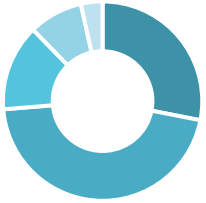
Starburst by the numbers

80
Starburst Employees

10
Countries

>140
Startups Invested in To-Date

Startup Maturity

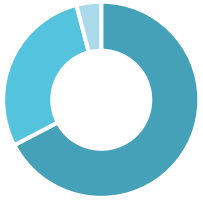


- Pre-Seed
- Seed
- Series A
- Series B+
- Exit in Process

Industry Focus

- Aviation
- Space
- Defense
- Enabling Technologies

Geography



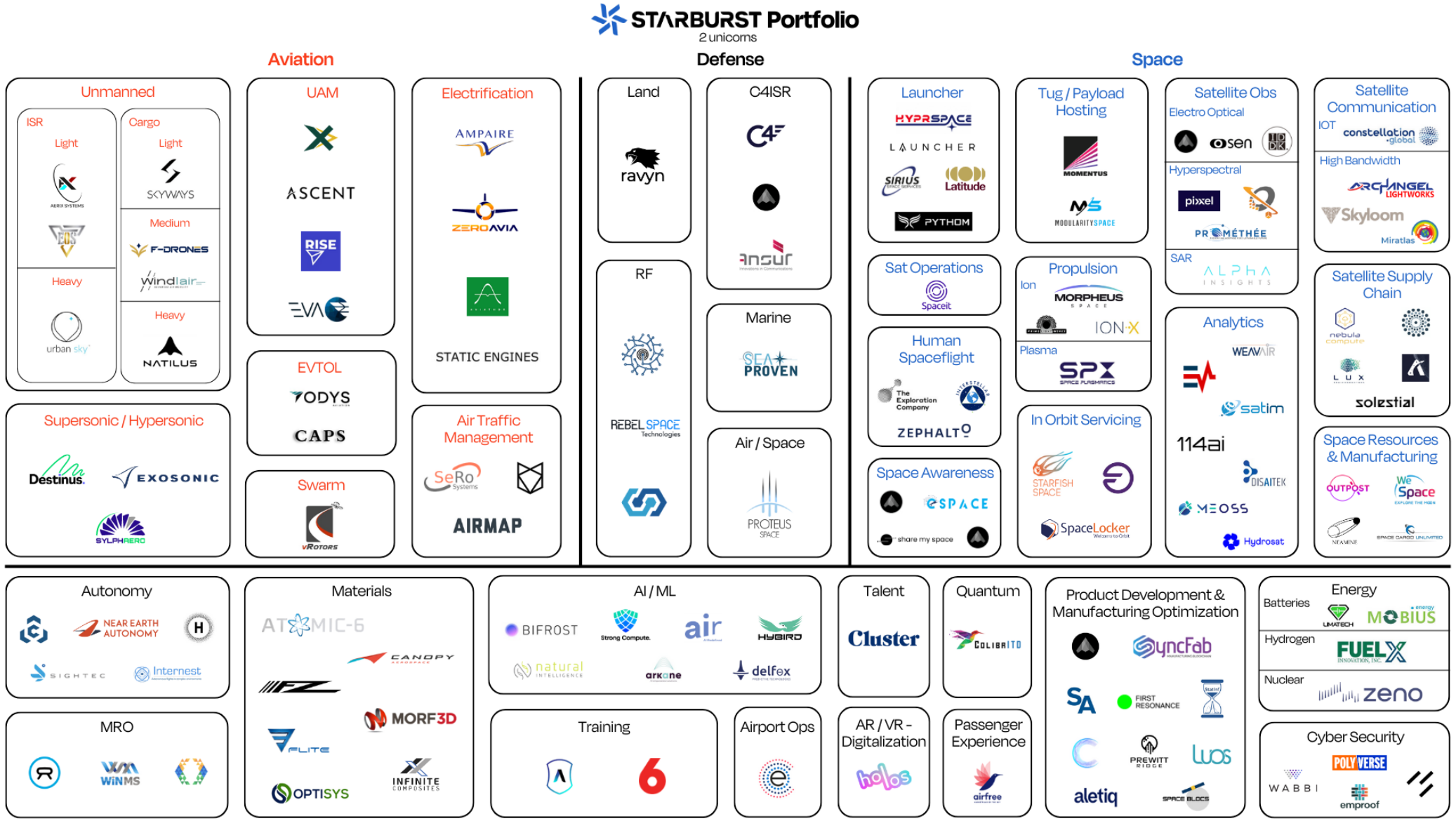
- North America
- Europe
- Rest of World

60+
Corporate & Gov. Partners

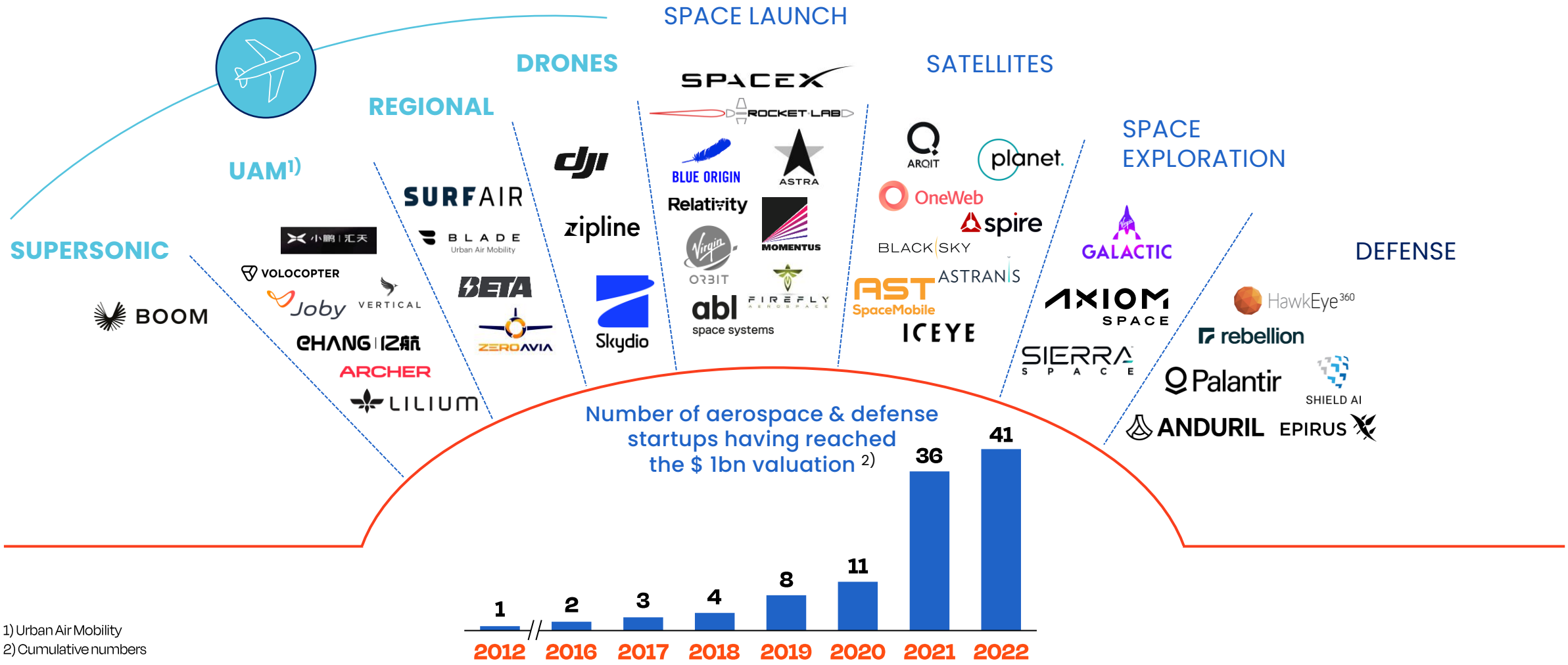
15,000+
Aerospace Startups Identified

1,000+
Investors Identified

Starburst Aerospace invested in over 140 startups in 7 years



01. Aerospace & Defense has become a true Venture Capital category



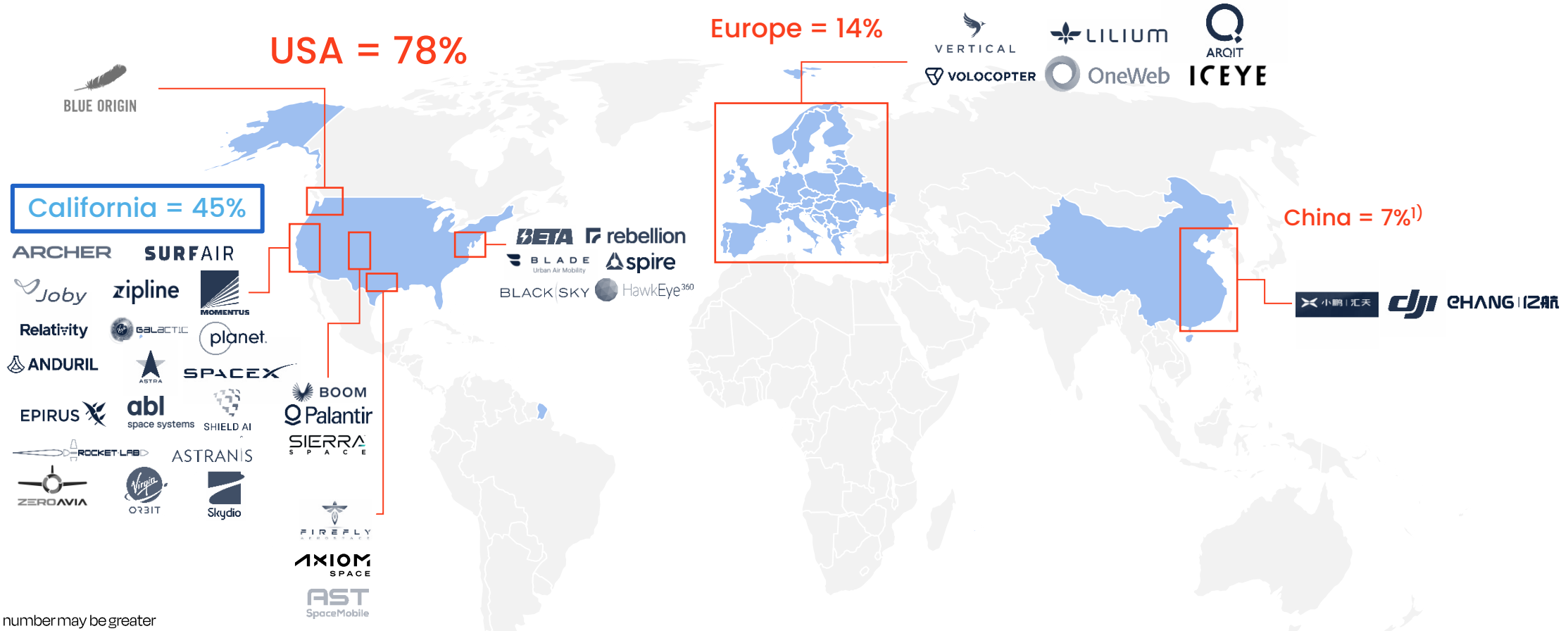
1) Urban Air Mobility
2) Cumulative numbers

Source: Starburst

The sharp increase in the number of aerospace unicorns highlights the overall strong development of the aerospace ecosystem in the past decade

01. Aerospace & Defense has become a true Venture Capital category

Half of the ASD unicorns are located in California

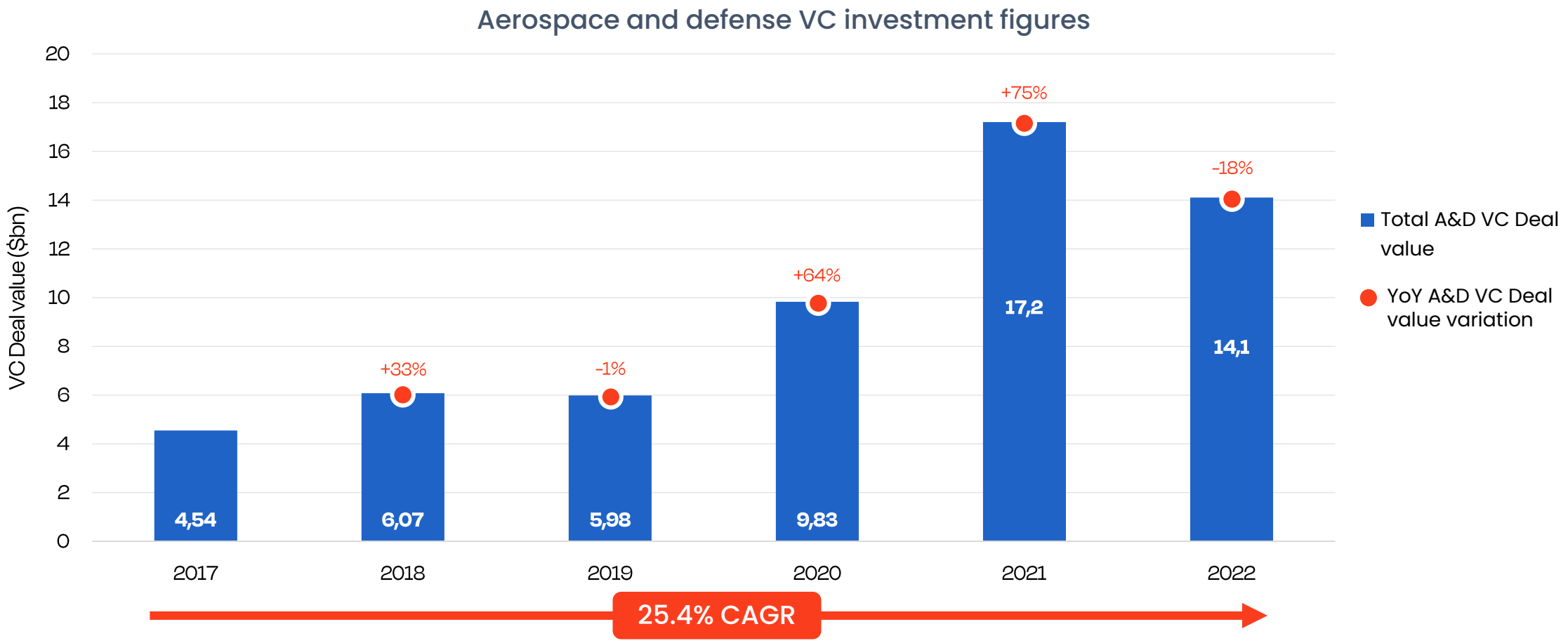


1) This number may be greater due to inaccessible information

Source: Starburst

Aerospace unicorns are found all around the world, but the US ecosystem stands out as the most mature

01. Aerospace & Defense has become a true Venture Capital category



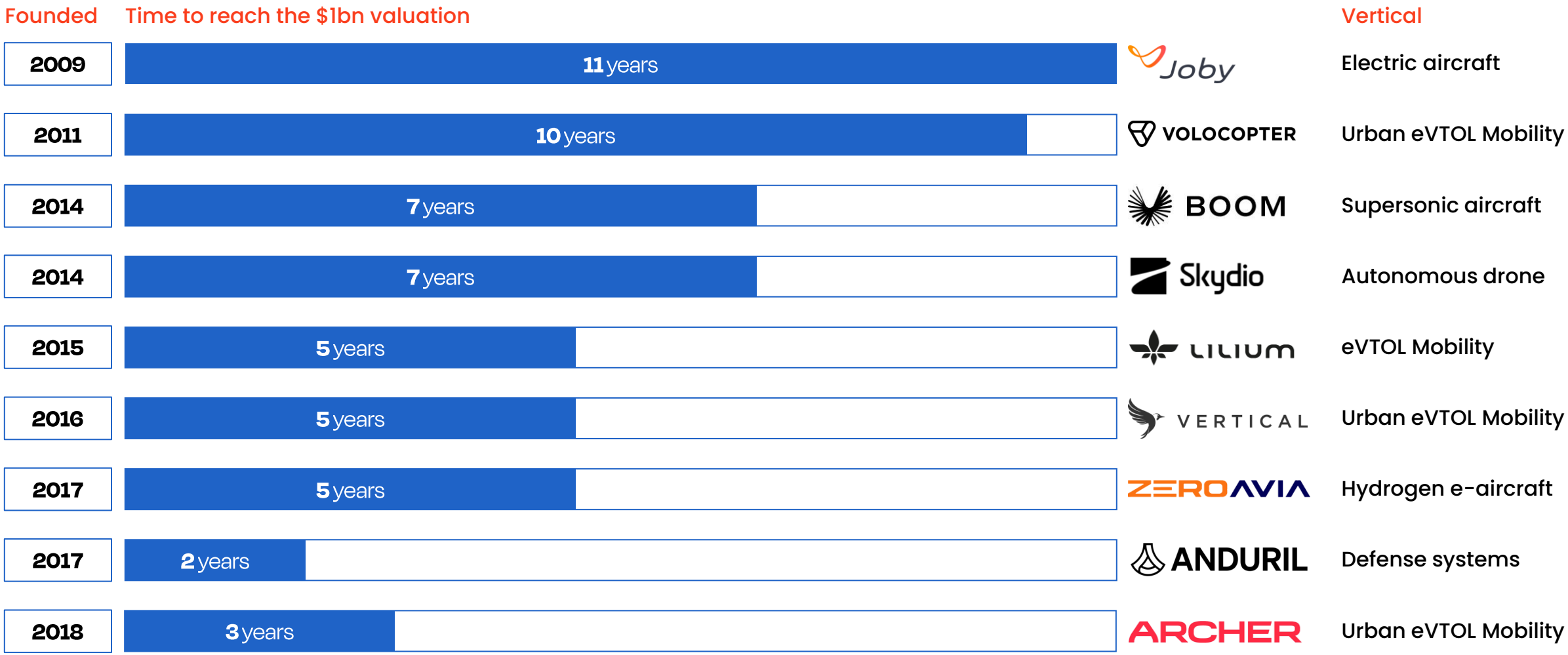
Since 2017, the sector has witnessed an **unprecedented surge in VC investment**

Source: Pitchbook

STARBURST

revolution .aero

02. Aerospace startups' time-to-unicorn has shrunk down by a decade

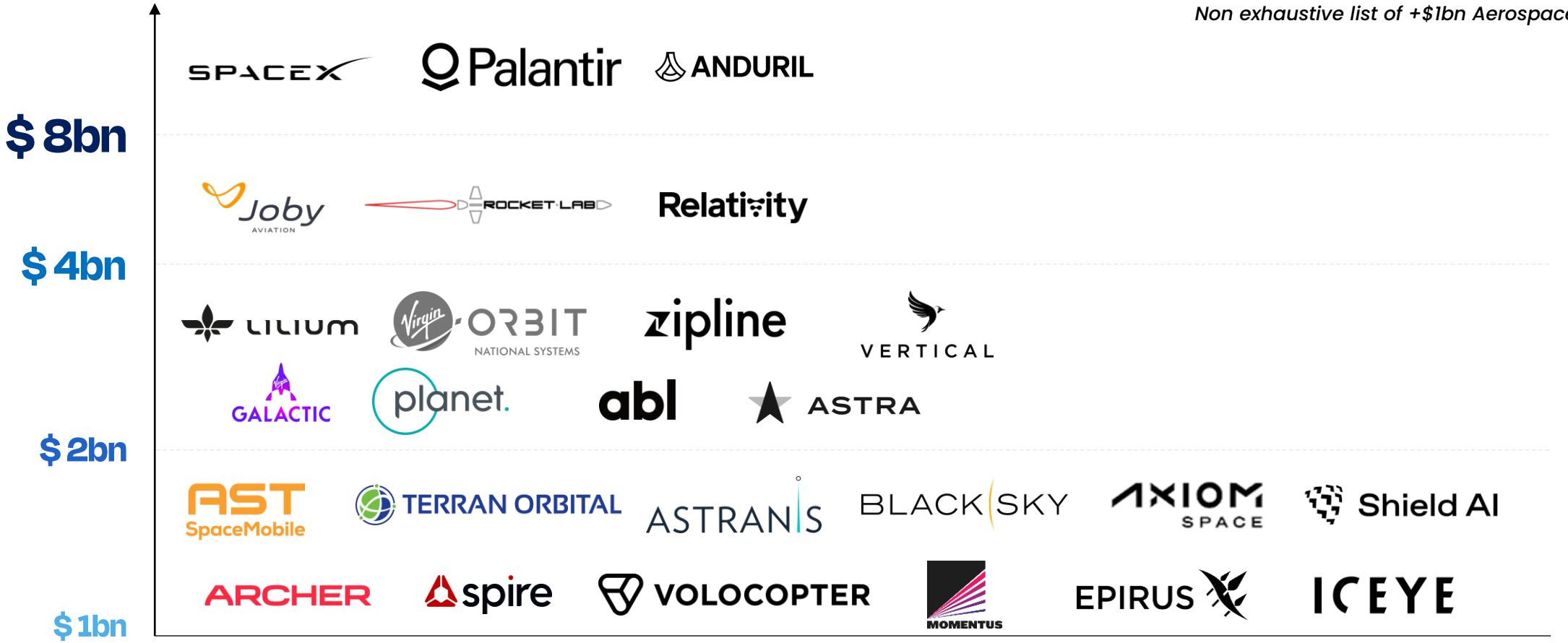


Source: Pitchbook

The time to the $1bn valuation mark for aerospace startups has dropped below 5 years, making this sector ideal for venture capital investing, with very high potential upsides

03. Aerospace startups keep growing way beyond the $1bn threshold

Non exhaustive list of +$1bn Aerospace startups



After crossing the $1bn threshold, multiple aerospace startups are growing into major aerospace players through contracts and product development, driving their valuations to the heights of industry majors

04. Successful aerospace founders are generally serial entrepreneurs

Blake Scholl

BOOM

Former founder of Kima Labs, Inc.

JoeBen Bevirt

Joby Aviation

Former founder of JOBY

Palmer Luckey

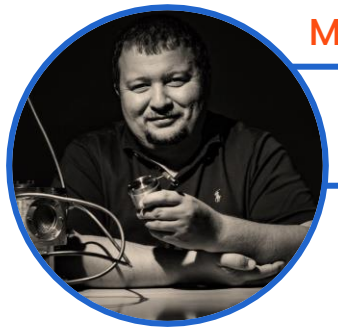
ANDURIL

Former founder of oculus

Marc Piette

XWING

Former co-founder of locu



Mikhail Kokorich

MOMENTUS Destinus.

Former founder of Astro Digital, ExactFarming

Stephen Fitzpatrick

VERTICAL

Former founder of OVO

Brett Adcock

ARCHER

Former founder of Vettery

Val Miftakhov

ZEROAVIA

Former founder of eMotorWerks

Ryan Tseng

SHIELD AI

Former founder of WiPower

Beyond billionaire founders, many serial entrepreneurs are successfully leveraging their experience to build A&D startups

05. Successful entrepreneurs focus on solving a problem, more than developing a disruptive technology

	Problem statement	Solution	Key technologies	Product
Joby Aviation	▪ Cities are congested and their airspace is not exploited ▪ Helicopters are not suited for urban environments	▪ VTOL capable electric aircraft ▪ Ride booking App	▪ Electric tilt-rotor ▪ Acquisition of Uber Elevate for ride booking services	
EXOSONIC	▪ Commercial flying has not gotten any faster since the 60s' ▪ Supersonic flight is expensive ▪ The sonic boom grandly restricts travel routes	▪ Quiet supersonic passenger transport aircraft	▪ Boom softening airframe ▪ Supersonic engines *Image render >*	
ZEROAVIA	▪ Increasing demand for air travel ▪ Increasing pressure to decarbonize aviation ▪ Incremental enhancement is not enough	▪ Hydrogen-electric engine for any commercial aircraft	▪ Fuel cell superstack module ▪ High temperature PEM fuel cell stacks ▪ Fuel cell compressor system ▪ Continuous power silicon carbide inverter	

Successful aerospace startups are driven by market pull more than techno push

06. Success often relies on a startup's ability to develop software on top of its "commodity" hardware

		XWING	ANDURIL	picogrid
COTS hardware	Commercially available hardware parts allow companies to purchase technological bricks off-the-shelf	*Airframe: existing aircraft (Cessna Caravan)* *Sensors: use of COTS electro-optical and infrared cameras*	*Hardware: COTS drones, existing military equipment*	*Hardware: solar panels and batteries, satcom equipment, 3G/4G/5G cells, radio, 128-Core NVIDIA GPU, …*
Smart integration	Building on the existing hardware offer allows to bring new products to the market efficiently	*Aircraft equipped with underwing sensor pods (FAA certification pending)*		*Lander: long duration deployable sensor platform* *Helios: mobile comms and sensor platform*
Software	Bring to market a final product for which most of the added value comes from the software	*"Superpilot": Plug-in software flying an aircraft autonomously with flight optimization and emergency response capabilities*	*"Lattice OS": Core AI-powered C3ISR, autonomous sensemaking and command & control platform*	*API: Unified data integration platform connecting fragmented sensors, cameras and autonomous systems*

Accessible hardware with satisfactory technical performance allows startups to focus on the development of disruptive software capabilities and hence address new markets

07. Startups supported by ecosystem builders like Starburst are more successful in navigating the hurdles of the A&D industry

Inherent challenges

- Aerospace legacy corporate market position
- Limited number of buyers all over the world
- High product development cost
- Extended product development time
- Difficulty to scale Deeptech products

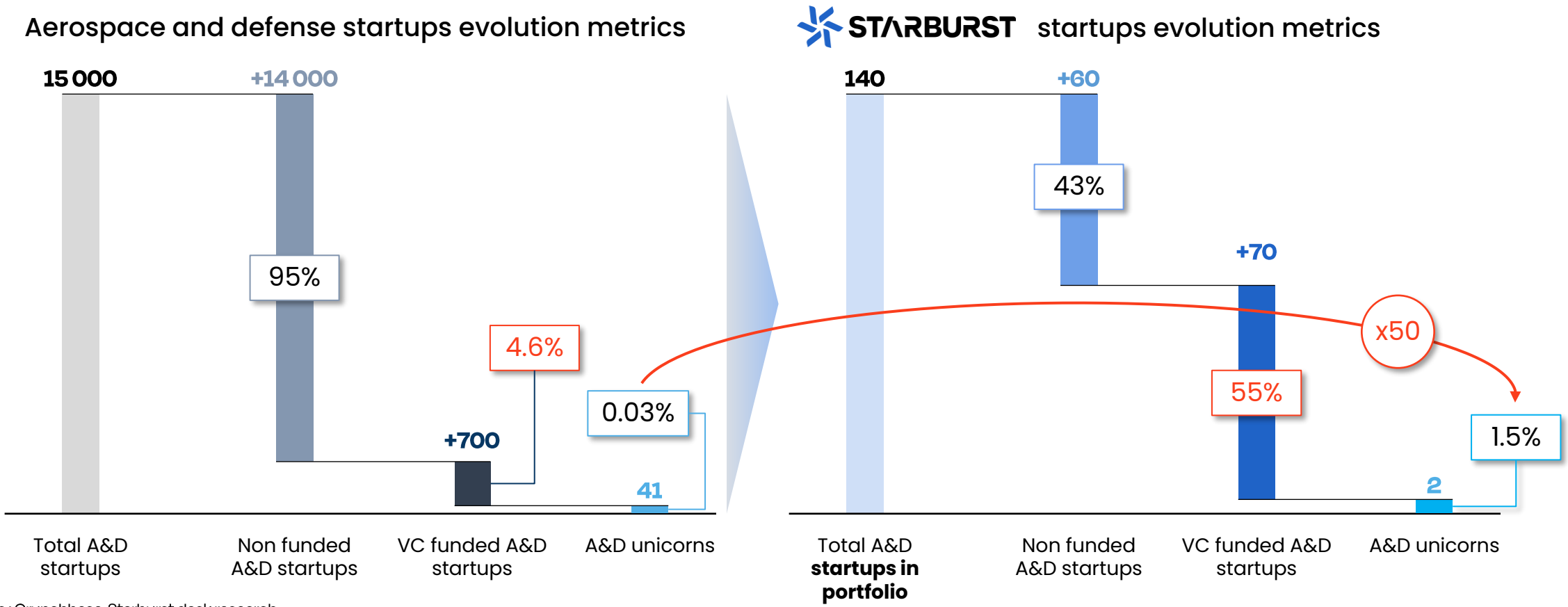
Network & ecosystem support

- Deep pocket investor supporting aerospace timeline and CAPEX requirements
- Access to a large network of potential clients, especially within government
- Advisory for key decisions
- Network effect for hiring, connecting to potential suppliers, …

Higher success probability

A strong network can help startups leverage ecosystem support, access venture and growth funds and help across all the operational aspects

07. Startups supported by ecosystem builders like Starburst are more successful in navigating the hurdles of the A&D industry



Sources : Crunchbase, Starburst desk research

Aerospace startups fundraising difficulties prove how challenging the ecosystem is and highlight the value that can be provided by a strong network and community

STARBURST

revolution .aero

François Chopard

chopard@starburst.aero