



## CUSTOMER STORY

# ARIS

Sintratec supports construction of the  
first Swiss Supersonic Rocket



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**aris**  
space to grow

Michael Kerschbaum  
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«The SLS technology allows for a high degree of flexibility combined with low weight – both important advantages for the aerospace sector.»

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Aerodynamic and robust: The built-in launch lug is stable enough to keep the rocket in the right position during lift-off.



The so-called Launch Lugs were 3D-printed first in FDM, then laser sintered by Sintratec using stable polyamide 12 powder.



ARIS' maiden flight in July 2020 was successful and the launch lugs withstood the forces.

**As part of the student association for space ARIS, a student team is building the first supersonic rocket of Switzerland. For their construction, they also make use 3D printing technologies such as Selective Laser Sintering.**

One goal of ARIS is to win the annual Spaceport America Cup (SPAC), where student teams from all over the world compete with their rockets. For 2020, the corresponding rocket project of ARIS is under the technical lead of physics student Michael Kerschbaum. «The aim of the project is to develop ARIS' first supersonic rocket and fly it to an altitude of almost 10,000 meters,» Michael states. With a successful maiden launch in July 2020, the team is one step closer to that goal.

#### **More flexibility with 3D printing**

Developing a supersonic rocket is not an easy undertaking. For a student project, the situation is further complicated by a limited access to industrial production methods and the lack of financial resources. As a result, the students at ARIS often rely on cost-effective 3D printing technologies to construct their prototypes. The main advantage of additive manufacturing lies in the great flexibility during the design phase. «3D printing allows us to be very creative when coming up with ideas and to quickly integrate new features,» Michael explains.

#### **Sintratec sponsors laser-sintered components**

Components on the outside of the rocket need to be aerodynamically optimized, as they affect the drag, while being robust enough to withstand the forces during lift-off. FDM parts quickly reach their limits in such applications, which is why the team looked for sponsors in the field of SLS. Sintratec was found to be the right partner to produce the required work pieces free of charge. The parts sintered with durable nylon powder are so-called Launch Lugs. «This is a very crucial part for the rocket's flight – if the launch lug does not hold in the first few moments, the rocket cannot lift off the launch rail safely,» emphasizes Michael.