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mission ready software.

FLIGHT SOFTWARE DEVELOPMENT KIT

overview



WHAT IS FLIGHT SOFTWARE DEVELOPMENT KIT?



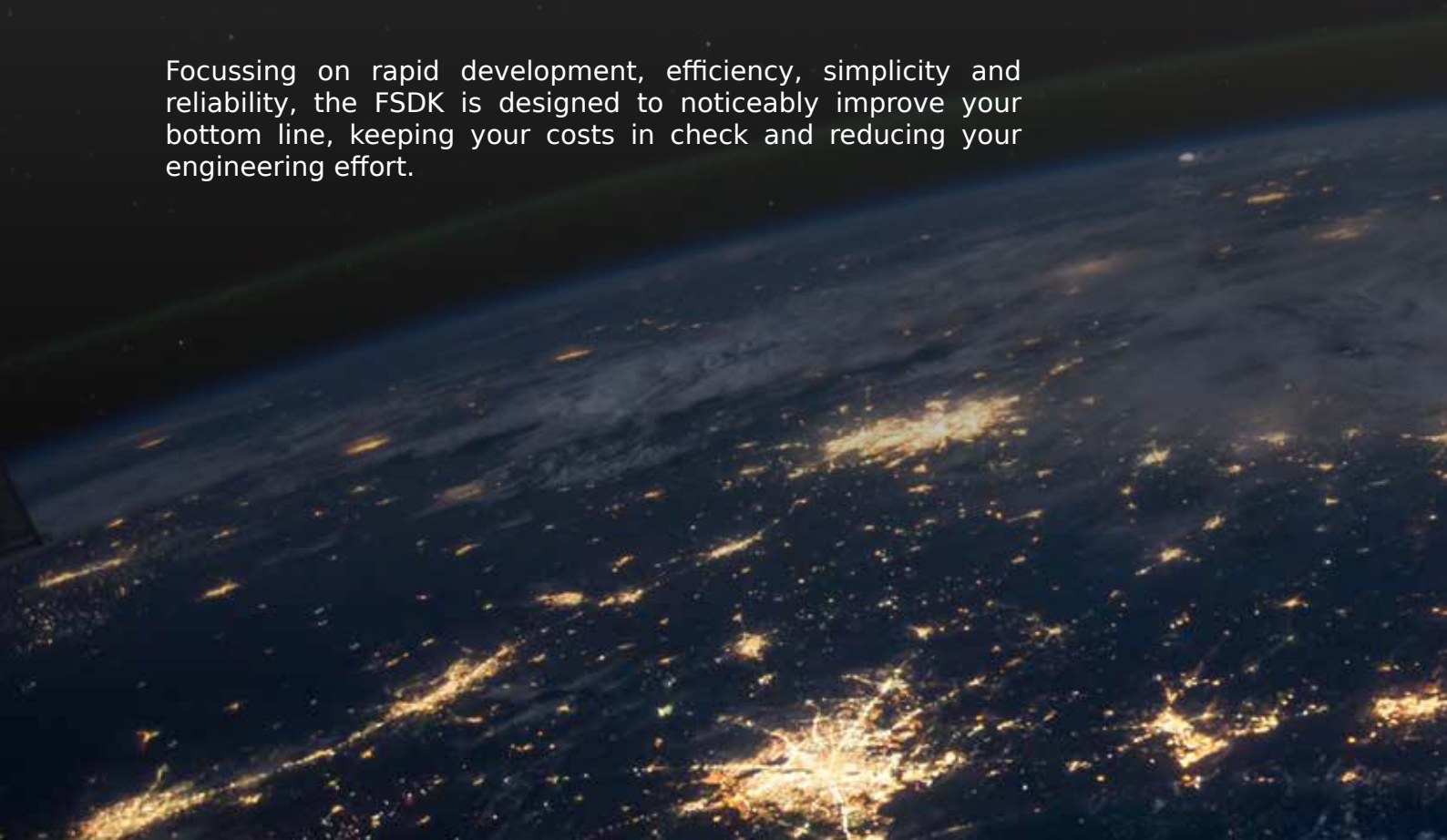
Flight Software Development Kit (FSDK) is a unique, innovative development environment, designed to create mission-specific flight software using configurable and pre-validated components.

We know that every mission is unique, but most spacecraft perform a number of similar tasks. Our pre-verified component library allows you to quickly cover basic flight software functionality, so you can concentrate your

efforts on the unique parts of your mission. This means that you can develop your flight package faster and with greater reliability – whether it's a single nano-satellite or a large constellation of small satellites.

LOWER YOUR COSTS.

Focussing on rapid development, efficiency, simplicity and reliability, the FSDK is designed to noticeably improve your bottom line, keeping your costs in check and reducing your engineering effort.



6

unmissable sides of mission development with FSDK



speed up mission development

Our component library covers all basic flight software functionality, so you can concentrate your efforts on the unique parts of your mission and significantly reduce development time.



design unique missions

The component-based architecture allows you to quickly and effortlessly add new components to support additional capabilities, tailored to your unique and specific mission.



reduce risk

Our heavily-tested components come pre-validated with extensive flight heritage, reducing the risk of failure and giving you peace of mind.



scale up

As your space system grows, the FSDK allows you to quickly and easily adapt your flight software package.



get multiple vendors

Multiple hardware vendors can be chosen, even within a single constellation, so you can get the most suitable and cost-effective subsystems for your mission.



keep it simple

Simplicity and ease of use, coupled with support and training to get you started, help remove the requirement for specialist skills.



HOW IT WORKS.



The FSDK comprises three key parts:

- ❏ an extensive library of pre-validated components covering all space mission needs and developed to a strict coding standard for mission-critical software
- ❏ a lightweight framework which promotes portability and modularity, allowing individual layers to be modified or substituted without impacting layers above and below
- ❏ tooling to support component development, software integration and testing, which helps guide engineers through the process rapidly, promoting an agile and iterative approach

The FSDK component library includes a wide range of components covering all mission needs, including subsystem, data handling, monitoring, communication, automation and mission components.



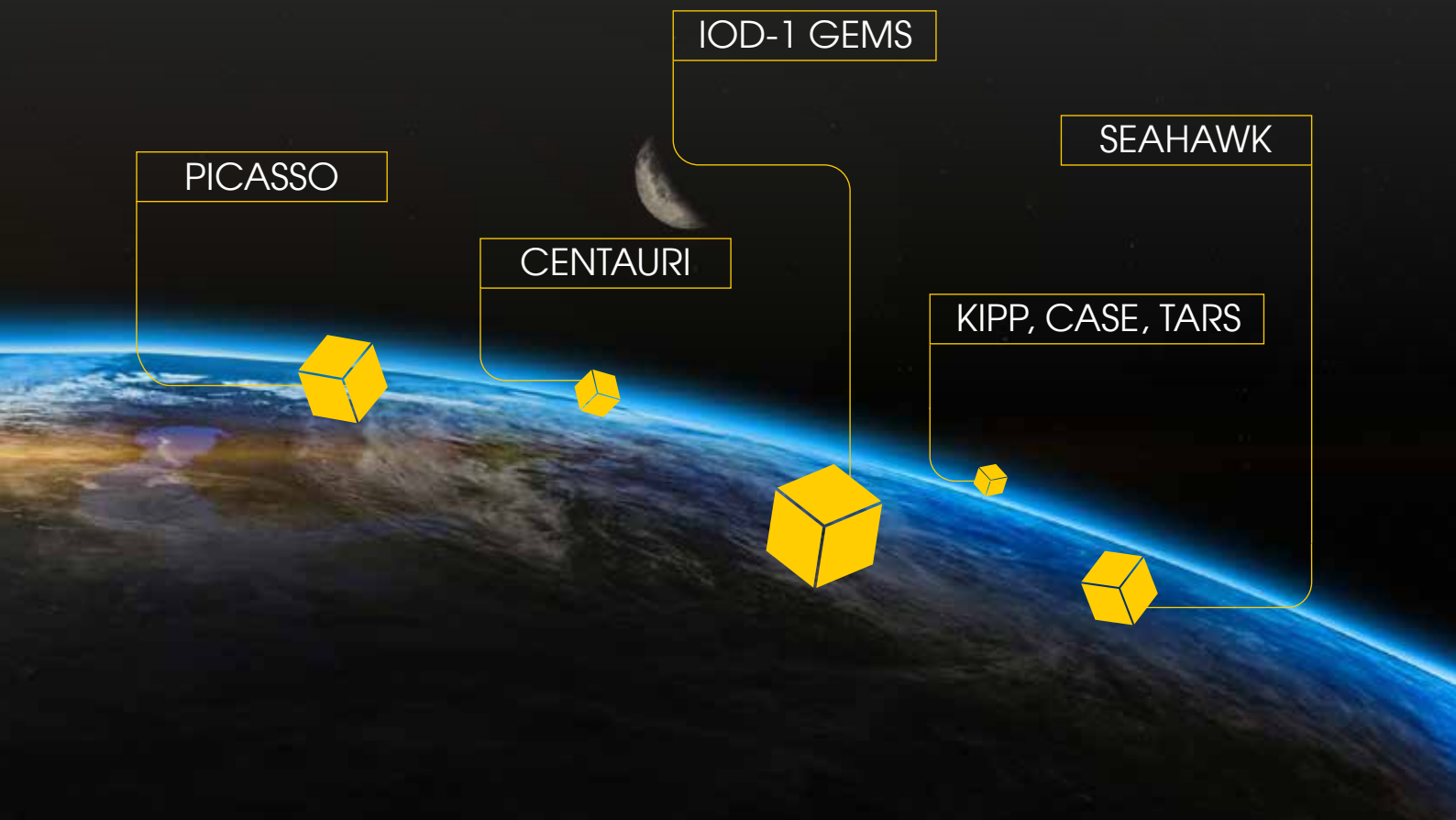
WE ARE FLIGHT PROVEN.



24 spacecraft launched with our **FSDK** on board*

We are proud of our flight heritage.

Visit our website to see the [full list of satellite missions](#) that are building our legacy of unparalleled quality and reliability.



* With many more missions in development, this number is constantly growing.

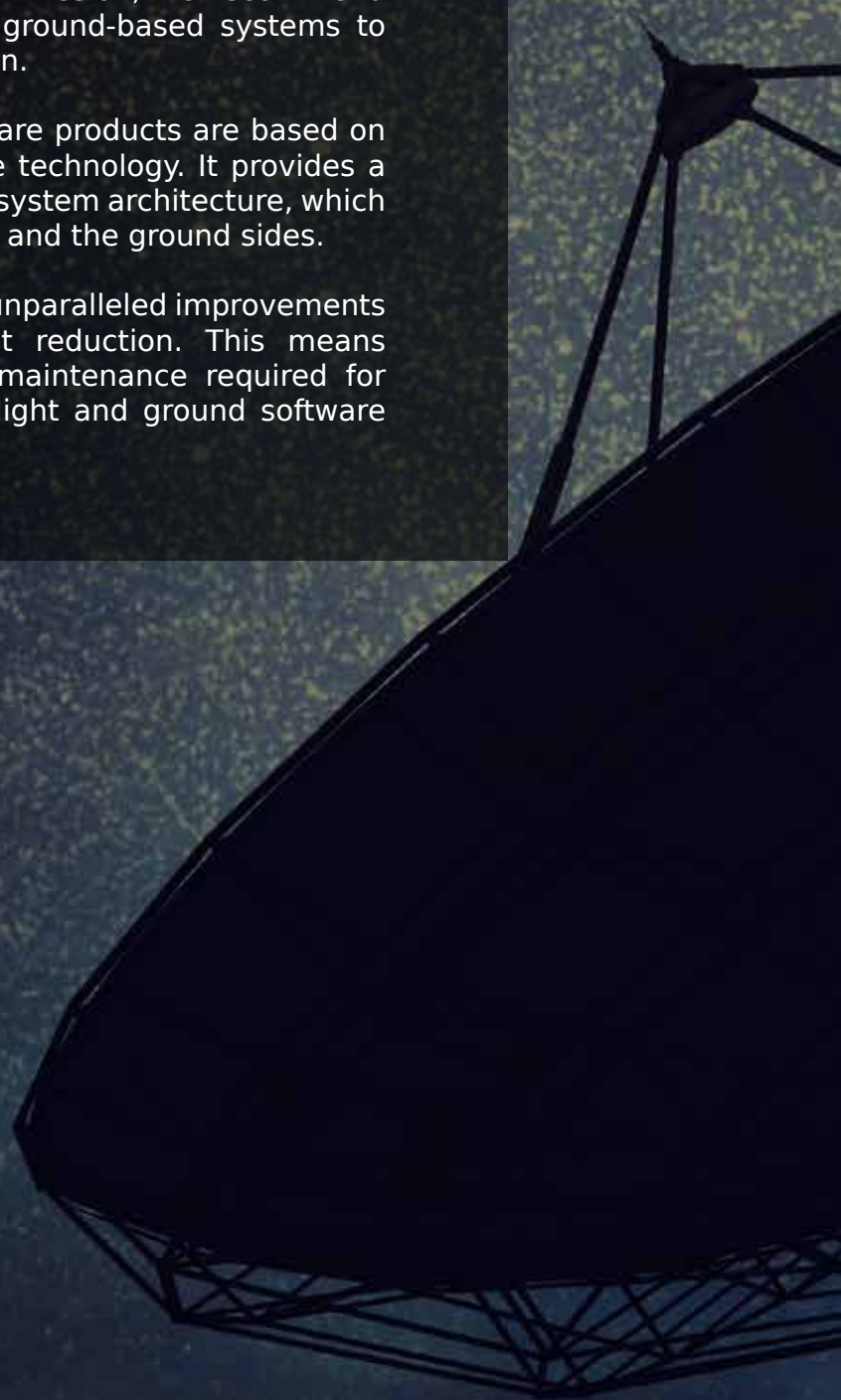
EASY INTERGRATION.



To get the maximum value for your mission, we recommend that you use both our space- and ground-based systems to ensure easy and seamless integration.

Our FSDK and Mission Control Software products are based on the same underlying GenerationOne technology. It provides a machine-readable description of the system architecture, which is understandable by both the space and the ground sides.

This approach offers significant and unparalleled improvements in efficiency, automation and cost reduction. This means that there is little or no ongoing maintenance required for the missions, which use both our flight and ground software products.



LICENSING AND SUPPORT.



We offer different license types across all our major products to address different market segments, from large companies or those offering services within the industry to small and medium-size commercial organisations and institutions. We also support academic licenses for universities, schools and early-stage start-ups.

Each licence includes a full year of support and maintenance as well as training to get you started. Extended support options, including additional training, are also available.

SYSTEMS AND PLATFORMS.

onboard computers

- AAC Clyde Space Kryten and Sirius OBCs
- CubeSpace CubeComputer
- GomSpace Nanomind A3200 and Z7000
- ISISPACE iOBC
- Vorago RH-01 VA10820-based Radiation Hard OBC
- Xiphos Q7 and Q8
- BeagleBone Black OBC
- Many other Linux-based OBCs incl. Raspberry Pi

operating systems

- Linux
- FreeRTOS
- RTEMS
- Bare metal environment using the built-in cooperative multi-tasking capabilities of the framework

off-the-shelf subsystems

- AAC Clyde Space Sirius TCM
- ArduCAM Mini 5MP Plus
- Astrodev radios including the Helium and Lithium
- All AAC Clyde Space CubeSat subsystems
- CPUT/F*SATI radios including UHF/VHF and S-band
- GomSpace subsystems, including the SDR
- ISISPACE subsystems, including the UHF/VHF transceiver
- Maryland Aerospace MAI-400
- NearSpace Launch Eyestar Duplex Modem
- Novatel OEM6 GPS
- Orbitonics C3D Imager
- Pumpkin subsystems, incl. power systems
- QB50/CubeSpace ADCS
- QinetiQ Q20 HD GPS
- A range of miniaturised sensors and ADCs
- Modems compatible with the ITU-T Rec. V.250 standard

Our range of supported subsystems is extensive and constantly growing. Contact us if your chosen subsystem is not listed.

communications protocols

- ECSS Packet Utilisation Standard (PUS)
- CCSDS Packet Protocol
- CCSDS File Delivery Protocol
- CCSDS Telemetry and Telecommand framing, synchronisation and coding
- CCSDS TM Space Data Link Protocol
- CCSDS TM Synchronization & Channel Coding
- CCSDS TC Space Data Link Protocol
- Simple SHA-1 HMAC authentication
- CCSDS Space Data Link Security, for AES256 encryption and SHA256 authentication
- CubeSat Space Protocol (CSP)
- Generic KISS support
- Many others in development

FREE TRIAL.

Still unsure if our FSDK is the right software for your mission? Contact us today for an interactive **demo** or a free **trial**.

enquiries@brightascension.com
+44 (0) 1382 602041

brightascension.com

