



cloudy\_**CHARLES**



BRINGING  
YOUR **EO MISSIONS**  
BEYOND **THE CLOUDS**

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HELLO,  
**I'M CHARLES!**  
IT'S NICE TO  
**MEET YOU**

## CHARLES IN A NUTSHELL

cloudy\_CHARLES is an on-board data processing software based on Machine Learning models. It identifies clouds in optical images moments after their acquisition, allowing to keep only the most useful and clean frames.

## EO PROBLEMS

About 60% to 70% of optical imagery data is affected by the high presence of clouds, often making the images useless. This is typically discovered on ground after the data has been downlinked.

With cloudy\_CHARLES onboard, only the frames worth being downloaded are sent to Earth, increasing the mission efficiency and reducing downlink costs.

## PERKS OF ON-BOARD AI

- + Accuracy score  $\geq 90\%$
- + Real-time image analysis
- + Tailorable to different payloads

## COMPABILITY TESTED ON:

- + Nvidia GPU
- + Xilinx FPGAs
- + Intel Myriad
- + Google Coral
- + CPUs (TFLite, ONNX, and ArmNN runtimes)



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[info@aikospace.com](mailto:info@aikospace.com)

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