

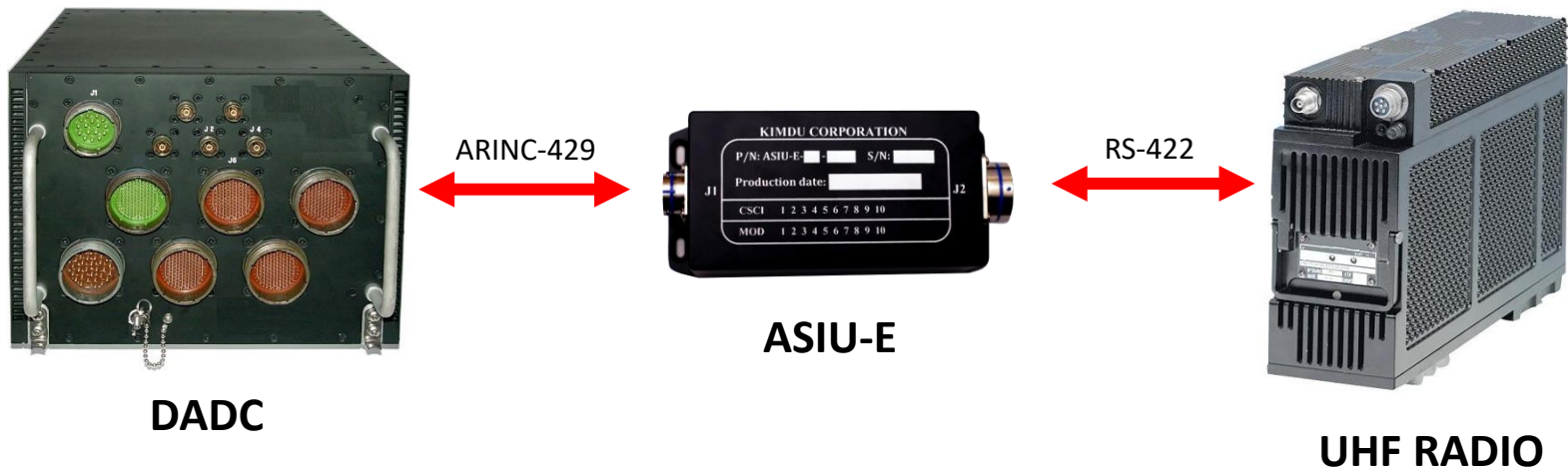


SAMPLING OF PROTOCOL CONVERTER APPLICATIONS

New UHF Radio Added to System

In this application, a UHF radio was replaced in the system. The original architecture had the DADC, Digital Air Data Computer, control the previous UHF radio via an ARINC-429 data link. The new UHF radio only had an RS-422 interface.

In order not to modify the DADC hardware which would have cost enormous time and money to change and re-qualify, the customer added KIMDU's ASIU Protocol Converter in order to translate between the ARINC-429 and RS-422 interfaces. In order for the translation to happen in a transparent way; thus eliminating the need to modify the equipment's software, Kimdu modified the ASIU's firmware in order to transparently translate between the two sides. Both bus timing and communication interface protocol needed to be implemented to match the expected data and timing in both units.



Cockpit Switches Were Added to System

Helicopter Gunship

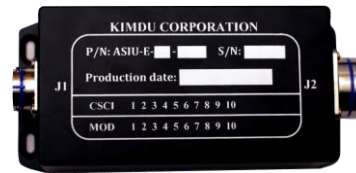
In this application, new switches in the cockpit were installed to add functionality previously unavailable.

The customer added KIMDU's ASIU Protocol Converter in order to translate between 32 discrete inputs; 16 x 28v/Open contacts and 16 x Ground/Open contacts that needed to be read by the Air Data Computer. The ASIU was programmed with two different ARINC-429 Labels; one Label for 28v/Open contacts and a second Label for Ground/Open contacts.



**COCKPIT
PANEL**

Discretes



ASIU-E

ARINC-429

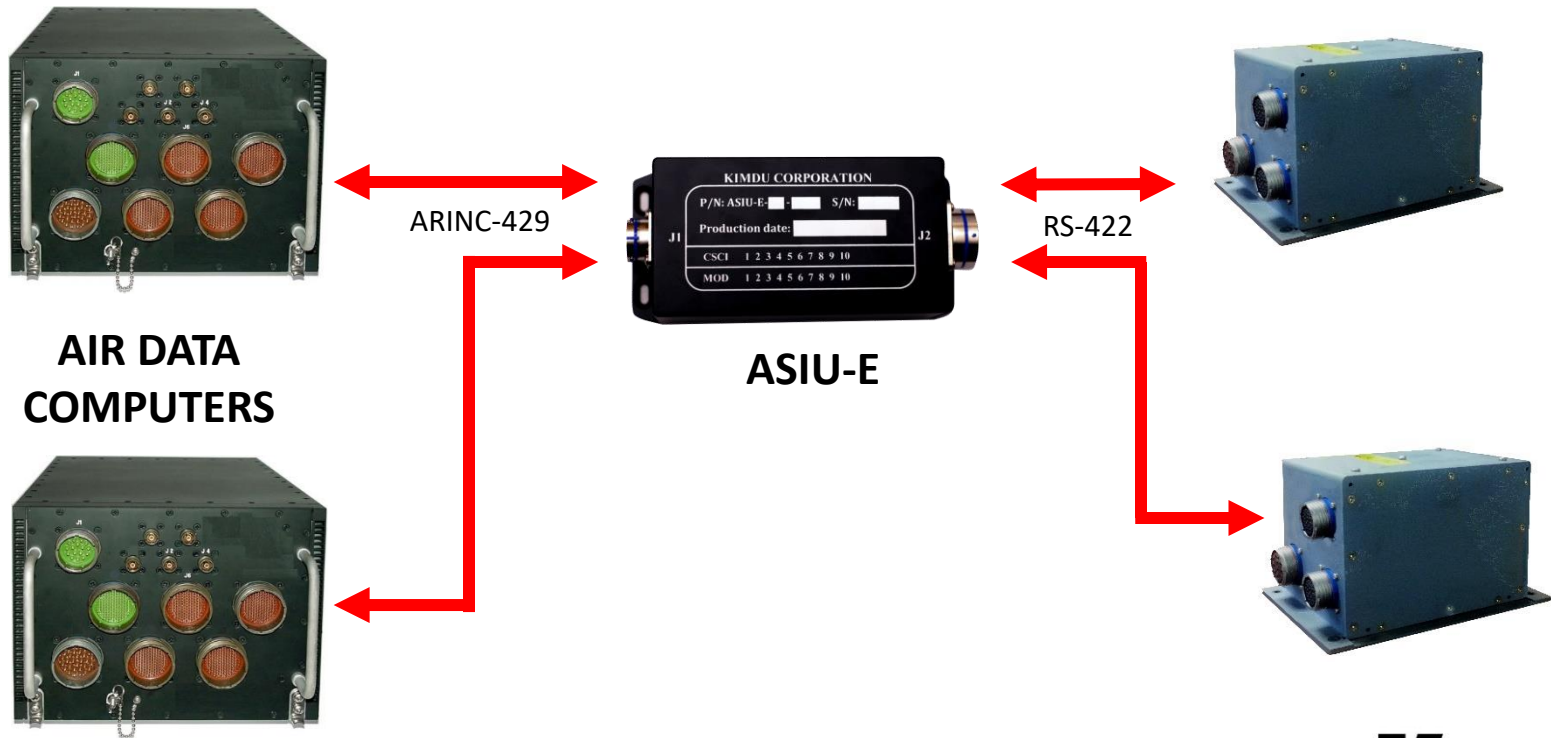


**AIR DATA
COMPUTER**

Using the ASIU as a Redundant Protocol Converter

Redundant Air Data Computers to control Redundant Subsystems

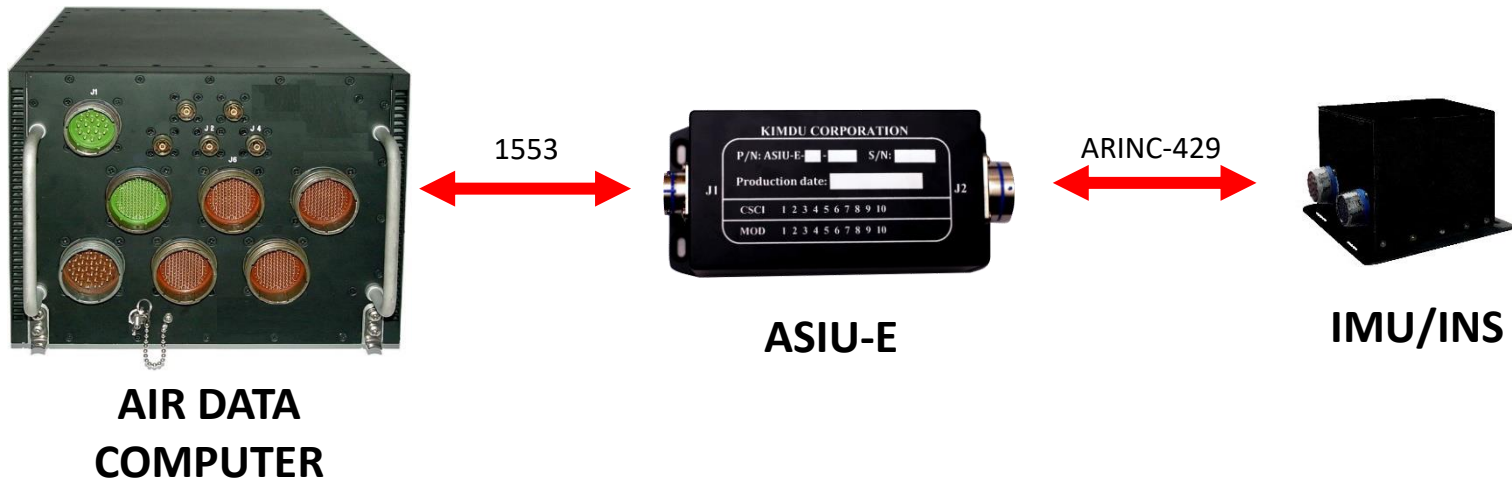
In this application there was not sufficient room to add two protocol converters necessary for redundant Air Data Computer links to two, redundant subsystems. The customer added KIMDU's ASIU Protocol Converter programmed to operate as two, independent, ARINC-429 to RS-422 protocol converters.



ARINC-429 to MIL-STD-1553 Bridge

In this application, an IMU/INS positioning system with an ARINC-429 interface was added to a system using only MIL-STD-1553B to interface to all subsystems.

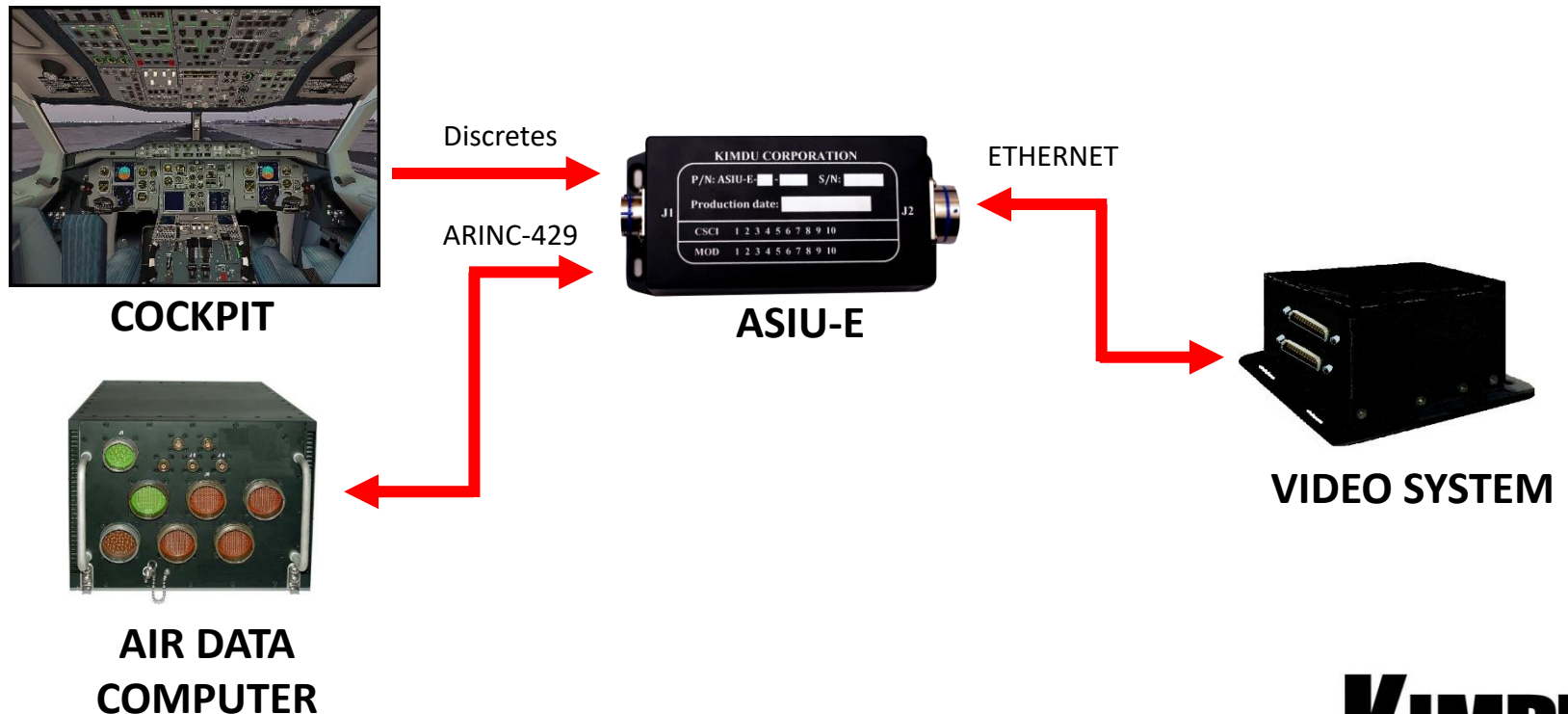
The KIMDU ASIU Protocol Converter was added as a bridge between the two dissimilar communications buses. Since ARINC-429 and 1553 have different protocols and there is no standard/universal translation definition, Kimdu worked with the customer in order to define the translation that was eventually used to program the ASIU.



Multi-Protocol Conversion

Multi-protocol converter necessary to interface between Air Data Computer, Cockpit Switches and Video System – all with different communication buses.

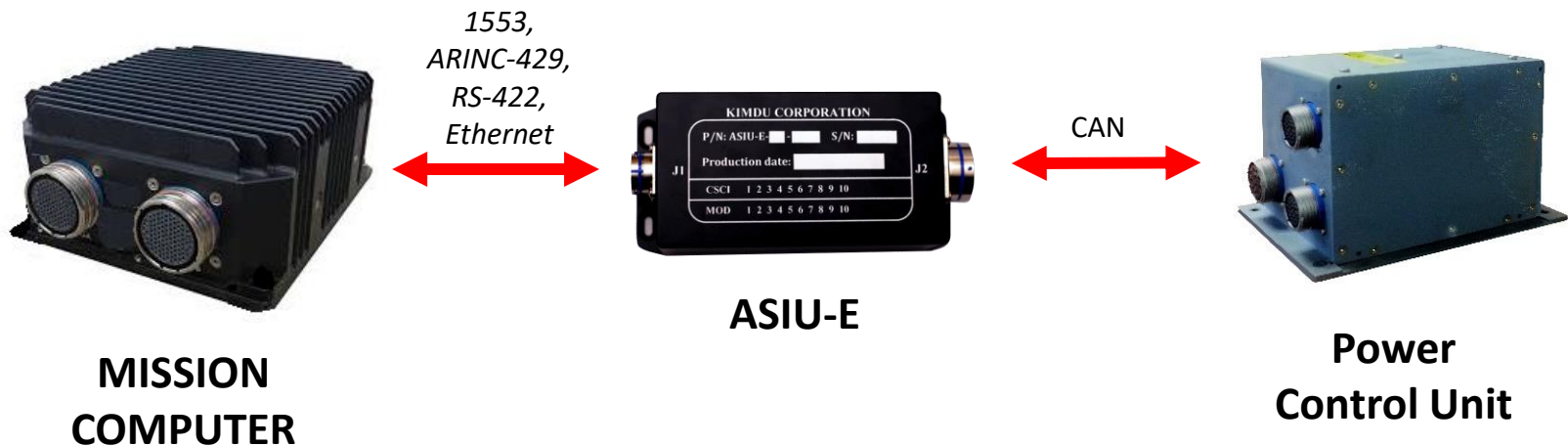
KIMDU's ASIU Protocol Converter was programmed to convert between Discrete inputs, bidirectional ARINC-429, and Ethernet.



Interfacing to Power Control Unit

In this application, a Power Control Unit (PCU) is used and needs to be controlled by the Mission Computer which does not support CAN Bus used by the Power Control Unit. The Mission Computer can control the PCU via the ASIU-E using one of the many standard interfaces available in the ASIU-E.

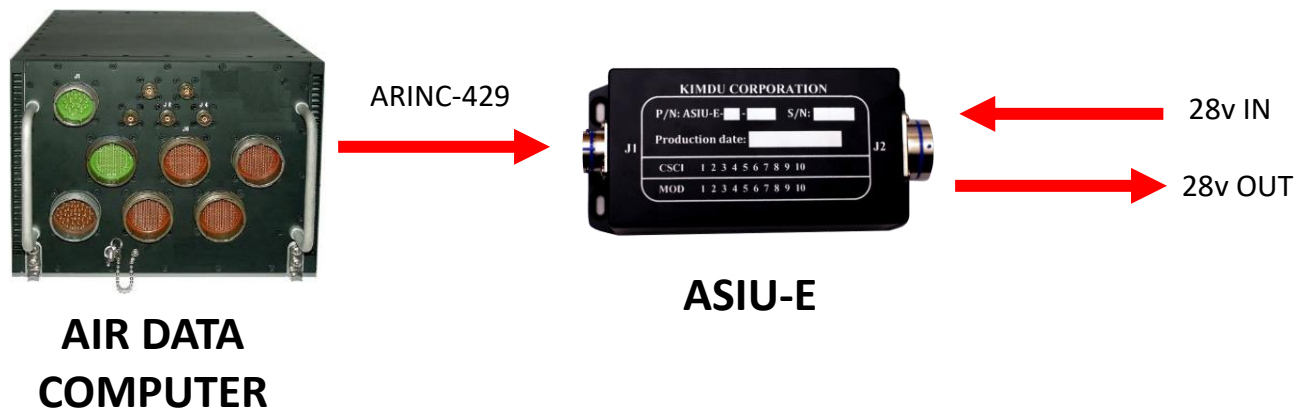
The ASIU-E can be programmed in such a way that will relieve the Mission Computer from low-level control handling required by the PCU; both for power enabling and disabling along with housekeeping communications with the PCU.



Relay Activation Based on Altitude

In this application, a customer required 28vDC power be applied to an external device when the aircraft reached an altitude of 15,000ft. Kimdu utilized the internal mezzanine socket to add a power relay that is closed when the ASIU-E monitored an altitude of 15,000 ft (or more). For this purpose, the altitude information was available from the ARINC-429 altitude Label.

The altitude was stored in ASIU-E flash memory and could be modified, if required.



Interfacing to Cockpit Joystick

In this application, a new multifunction joystick is replacing an older, less functional one. The old joystick used RS-422 for interfacing to the flight computer while the new one uses ARINC-429.

The ASIU-E can be programmed to operate transparently with the flight computer and can also have additional functions added.

