MIDDLE EAST TECHNICAL UNIVERSITY

Avionic and Electrical Architecture Proposal Report

Our intention in this report is to present our ideas for the electrical and avionic architecture of our VLA. This is a draft document and therefore should not be regarded as the final proposal.

On Figure 1, you can observe the crude electrical architecture. Two busses – main and essential- are used on the architecture, typical for such aircraft. The generator relies on the engine to provide power while battery is used to provide a steady and safe source of energy in the case of a discrepancy.

GMFD stands for the control panels.

CVR is the black box.

The rest is given below.

Figure 2 shows our design for the avionic architecture. The avionic architecture relies mainly on ARINC-429 standard, which is well known to be wide spread in non-military avionic applications. However, the system also employs discrete and Ethernet connections. To denote briefly the individual components on the architecture:

CV / FDR stands for “Cockpit Voice / Flight Data Recorder”, is the black box of the aircraft.

G500 represents Garmin G500 dual screen electronic display.

BFI or more commonly BFS is the “Backup Flight System”.

ADC is the air data computer.

INS / GPS stands for the Inertial Navigation System and the Global Positioning System.

ELT is the Emergency Locator Transmitter.

ICS is the Intercom equipment.

V/UHF is the Very High and Ultra High Frequency Radio.

Mode-S is the Mode-S Transponder.

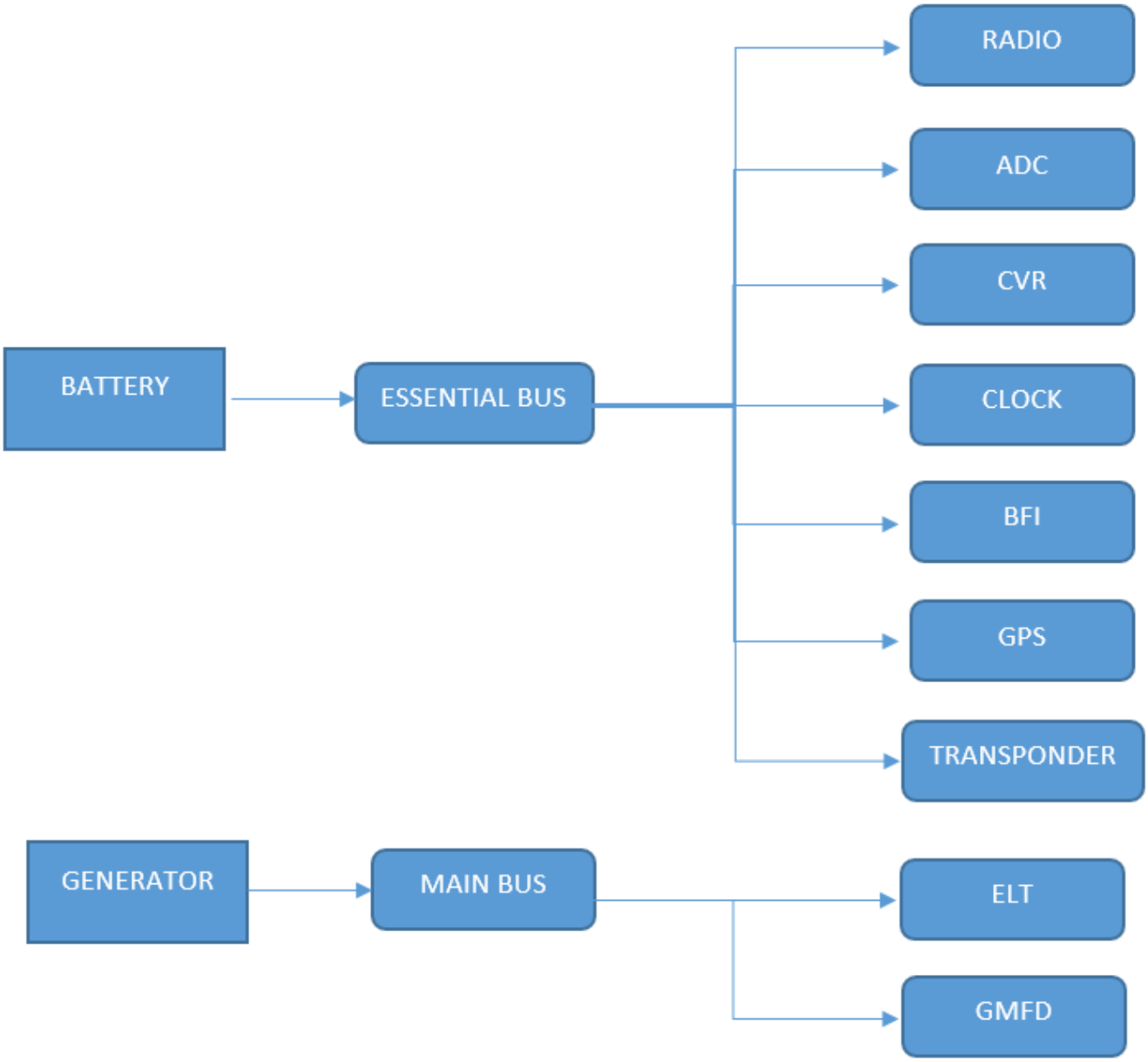

Figure 1 : The crude electrical architecture

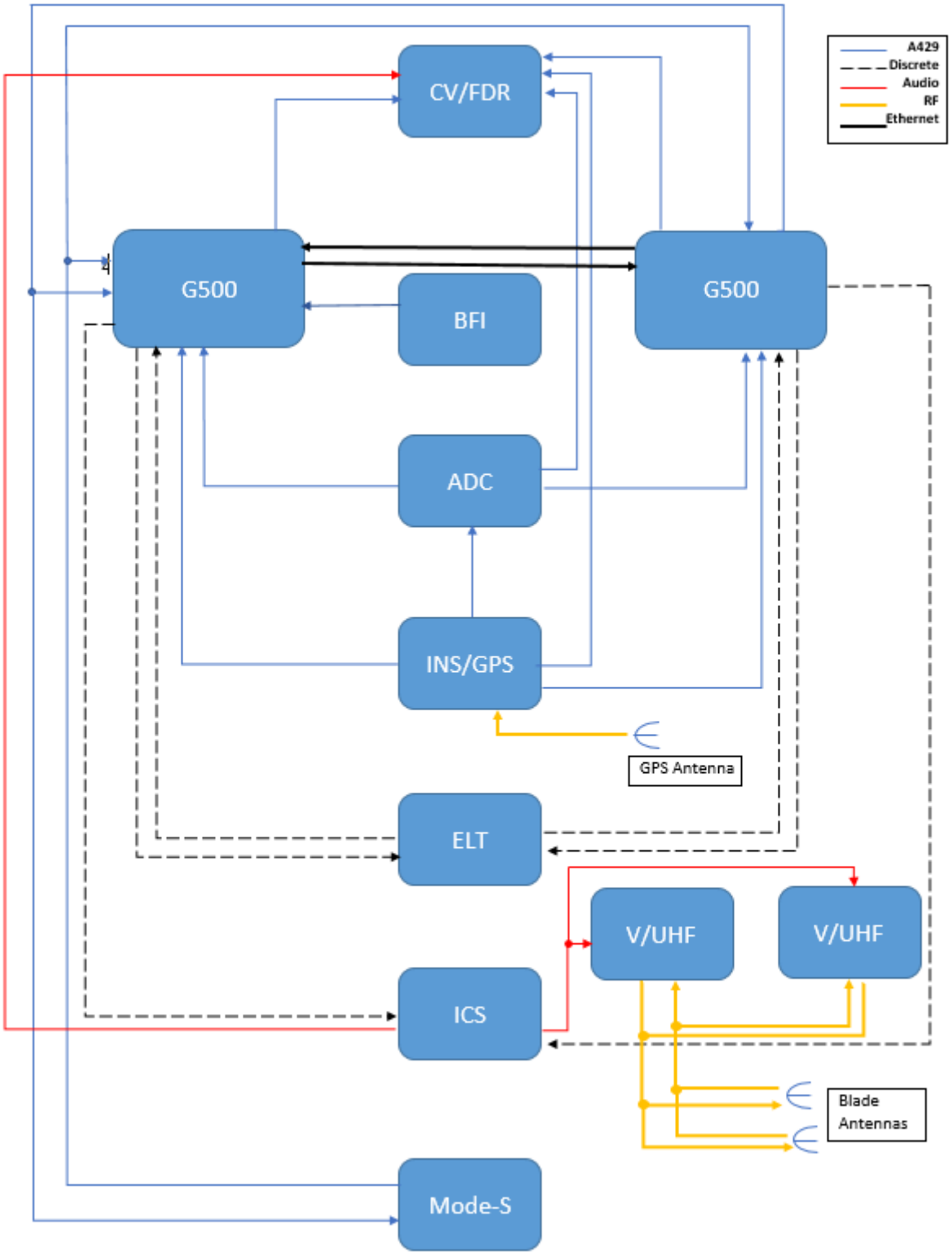

Figure 2 : The proposed avinoic architecture. Notice the legend.