

# Appendix C

## 1 Deployment of SRDB data into MCS

In this appendix, we aim to deploy our SimpleSAT monitoring and control data exported from the SRDB into an mission control system (MCS) and simulate how this data could be used to switch on the Reaction Wheel (RW). Additionally, we would like to monitor the evolution the RW's temperature as well as the status telemetry parameters after the application of the defined calibrations.

The MCS that we have used is Yamcs Mission Control (<https://yamcs.org/>). The exchange format between the SRDB and this MCS is XTCE discussed in our paper. Our annotated video here <https://youtu.be/cAXjQG46cGY> shows the SimpleSAT SRDB in XTCE format data in use.

In summary we perform the following steps:

1. The XTCE file is loaded into the MCS
2. SimpleSAT simulator is started. This simulator deploys a basic OBSW that could respond to commands and that could also generate housekeeping telemetry
3. A command is sent to the MCS to activate the RW of SimpleSAT
4. The houskeeping packet defined in XTCE is decoded and the satellite operator is able to access and read the value of the parameter representing the temperature of the RW.

A similar illustration can be performed using monitoring and control data captured in MIB files in conjunction with the SCOS-2000 MCS whose source code is available via this link (<https://miconys.space-codev.org/>).