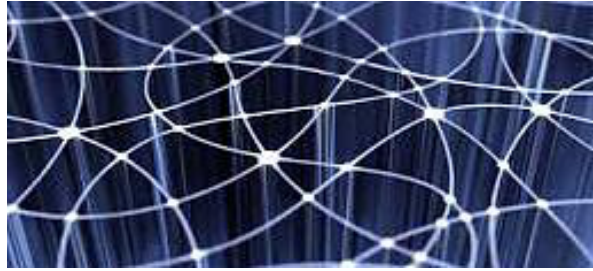


# High-performance Signal and Data Processing: Challenges in Astro- and Particle Physics and Radio Astronomy Instrumentation



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## **An ATCA framework for the ATLAS Front to Back End Electronics for the Phase II Upgrade at the LHC**

The Large Hadron Collider at CERN is scheduled to undergo another major upgrade in what is called phase II in the year 2022. During this upgrade the ATLAS team will do major modifications to the detector to account for the increased luminosity factor of ten. Almost the entire read out electronics, situated on the front end, will be relocated to the back end as well as upgraded. A radically new system will be required to house, manage and connect this new hardware. The proposed solution will be an Advanced Telecommunication Computing Architecture or ATCA which will not only house but also allow advanced management features and control at a hardware level through the Intelligent Platform Management Interface. The details and current setup of the ATCA and how it will be part of the TileCal upgrade demonstrator program will be presented in full.

### **Summary**

Keywords: LHC, CERN, ATLAS, ATCA, TileCal, LHC Phase II Upgrade

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