



## TECHNICAL DESCRIPTION

### Concept of Operation

The Lowell GIRO Data Center (LGDC) Replication system includes (a) snapshot copy of complete DIDBase and optionally DriftBase contents at the time of the system initialization at LGD, and (b) yearly raw ionogram and drift data updates via mass media mailings. In this arrangement, the retrospective data archives are available in full at the mirror sites; the real-time raw ionogram and drift data are still available only at Lowell node of GIRO until their yearly update is circulated via mail.

### Hardware and Software

The hardware and software components of the replication system are listed in Table 1 and 2.

Table 1. Hardware components of GIRO Data Center Replication system

PLATFORM	COMPONENT	CAPACITY	CURRENT DEMAND AS OF 2018	OPERATING SYSTEM
A	DIDBase and DriftBase (optional) Repositories	16 TB	DIDBase 6 TB DriftBase 4 TB (optional)	Linux
B	Backup Platform (optional)	32 TB	2 x 10 TB	Linux

Table 2. Software components of GIRO Data Center Replication system

PLATFORM	COMPONENT	VERSION	DESCRIPTION	MANUFACTURER
A, B	Firebird	2.5.8	DBMS for DIDBase	Firebird (open source)
B	Firebird	2.5.8	Database Backup tools (optional)	Firebird (open source)
B	DIDB_FILL	1.4.19	Ionogram data ingestion daemon	UML
B	DRIFT_FILL	1.2.8	Drift data ingestion daemon	UML

### Functionality

Once GIRO Data Center Replication system is installed at the hosting organization and configured for Internet access, local SAO Explorer and Drift Explorer workstations (<http://umlcar.uml.edu/downloads.html>) can be configured to use it instead of the master servers in Lowell. This will provide rapid access to retrospective GIRO data that were used to populate the mirror server at the time of its original configuration at UMLCAR.

## CONTACT INFORMATION

Further information on status and availability of GIRO Data Center Replication Systems can be obtained from UML Space Science Laboratory; contact Prof. Ivan Galkin at [Ivan\\_Galkin@uml.edu](mailto:Ivan_Galkin@uml.edu).