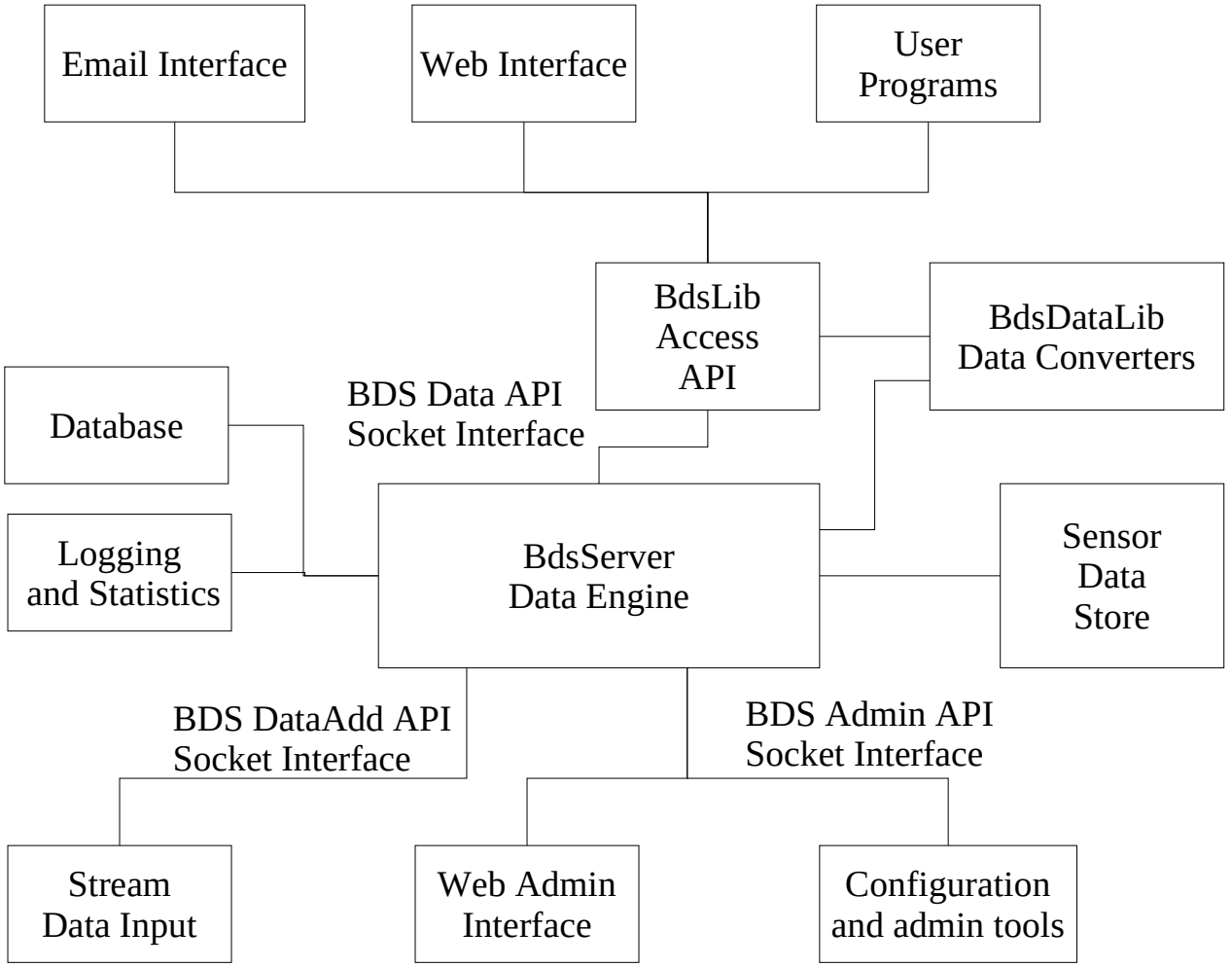
BDS Overview

- BDS - Blacknest Data System
- Work started in 2008
- System to store and recover seismic sensor data together with associated Metadata.
- Import seismic data from various sources and differing file formats
- Validation of data import with ancient data files
- Standardised seismic data and metadata access with simple object orientated network API

BDS Current

- Currently storing and serving around 24 TBytes of seismic data.
- Metadata database size is currently 13 GBytes
- Access via command line and GUI programs, Web interface, email Autodrm system and direct network API.
- Designed to meet the requirements of the seismic scientists working at Blacknest.
- Runs on Linux systems (Redhat7/Centos7, Fedora etc.)

BDS Overall Design



BDS Overall Design

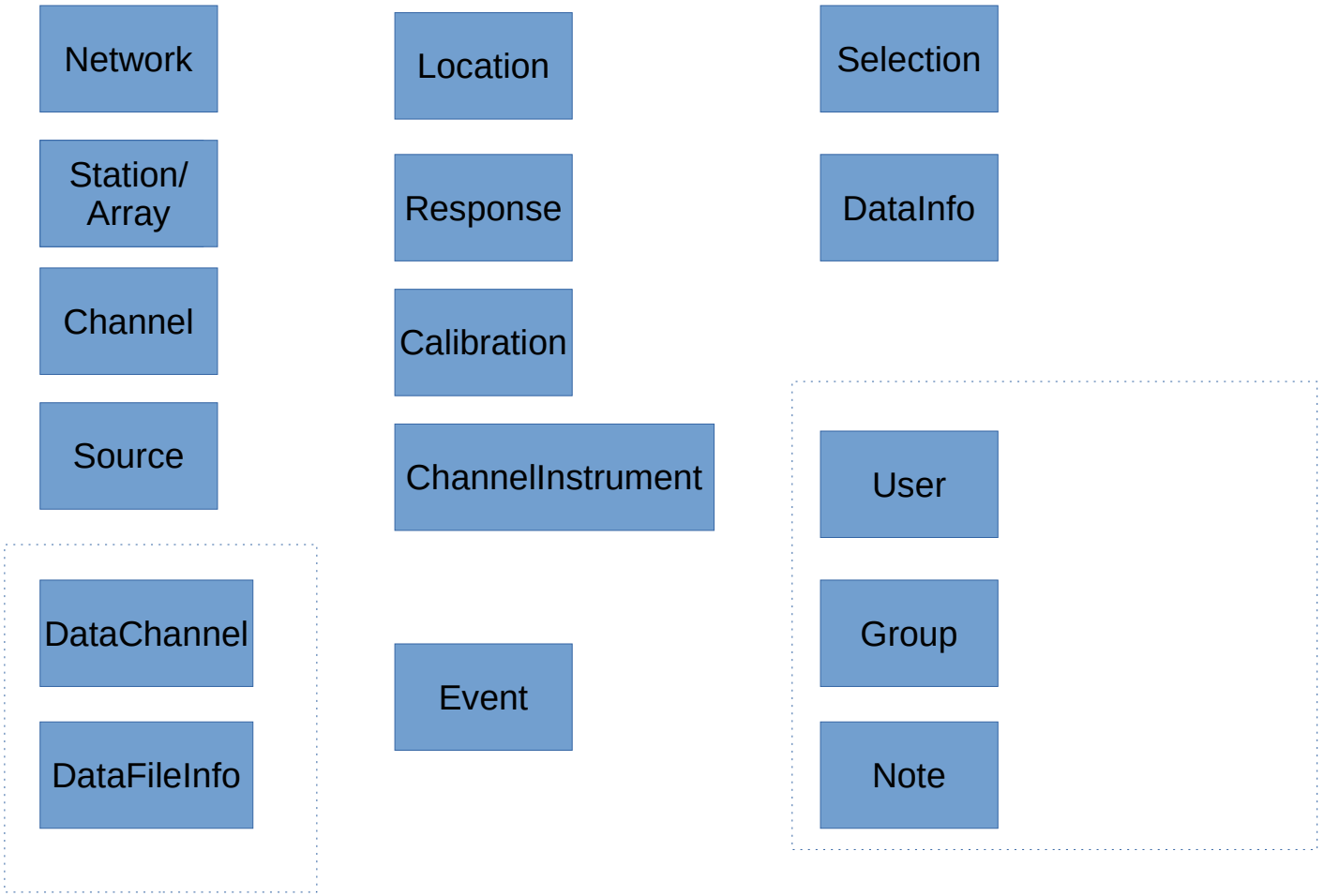
BdsServer

- The BdsServer is the main BDS access and control process.
- Runs on the main BDS server host at Blacknest and has access to the seismic data store and MySQL database.
- Implements the gateway that clients use to access, add and manage the seismic data and metadata.
- Object orientated IDL generated binary network API that clients use for access. Username/password protected access.

BDS Client Programs

- Various client programs have been developed for user usage as well as real-time import daemons etc.
- bdsUserGui for user data and metadata access
- bdsAdminGui for viewing and editing Metadata and simple seismic data viewing.
- bdsDataAccess simple command line data acess
- bdsWeb WEB interface to BDS for data access
- bdsImport*: various import programs

BDS API Classes



BDS API – Sensor Data

- BDS stores seismic and other time sampled data in BDS format data files.
- BDS file format stores data from all the different import formats and can handle these without data loss.
- Data is stored in blocks which have start and end times and samples for one or more channels.
- Channel multiplexed and Sample Multiplexed
- Data blocks have extra Metadata in some cases (TapeDigitiser quality etc.).

BDS API - Metadata

- Stored in a MySQL (Mariadb) database
- Accessed via Object orientated API.
- Generally one API object is stored in a database table row, but not always.
- Object types matches Seismic constructs

BDS Ongoing

- The BDS system is under continuous development at Blacknest and Beam.
- We are interested in the direction the CTBTO are going so we can try and keep compatibility with others especially with seismic Metadata schemas.
- More info at https://portal.beam.ltd.uk/support/blacknest (User/Password restricted access)