

TECHNICAL SPECIFICATIONS	Compliance
1. Automatic long term biobank storage system	
a) Fully automatic storage and retrieval integrated into single system	
b) Temperature of sample storage area -80°C as well as -198°C	
c) Capacity for one million samples, in cryotubes of two sizes (300000 nos ~1.8ml tubes and 700000 nos ~0.5 ml tubes) and DBS scalable in future to 3 million samples	
d) System compatible with a wide variety of labware vendors in the market	
e) 2D or higher barcode recognition	
f) Universal tube picker for all sizes	
g) Automated retrieval of individual/multiple tubes for retrieval with 99.9% efficiency	
h) Mechanism to identify non-retrieval of samples, possibly camera or software alert, etc	
i) Redundancy provisions for retrieval failure to be mentioned with back-up compressor on site	
j) System should have an interim module for retaining samples at -80°C either within or as separate module while waiting to be picked up in case of bulk transfers	
k) System serviceable without a rise in temperature of samples and least temperature variability during picking and sorting	
l) Active frost prevention mechanism	
m) Alarm system for temperature drop beyond 5 degrees (including sound beep to alert people in the vicinity, SMS and call to authorized person/s)	
n) Remote monitoring system	
o) Back up with appropriate Genset (as acceptable by NGT) or Liquid Nitrogen tanks and automatic switch over	
p) Water Chiller or improved system to be provided as appropriate to dissipate heat generated by refrigeration unit (AHRI or equivalent certified)	
q) Compressor for dry air compatible with environment and safety international standards (ISO 7183:2007)	
r) Background log for the system access and software use, time-stamped	
s) Possible scalability in same space should be calculated and provided for in design now	
t) System provided should be energy efficient	
2. Sample handling requirements	
a) For formatting and reformatting of samples collected in the centres	
b) Temperature controlled (possibly a cold room) with workbenches and lab setup	
c) Basic lab setup with pipette sets, refrigerated centrifuge, water bath, ph meter, electronic balance, refrigerator, -20°C freezer,	
d) Automatic aliquoting facility	
e) Automated extraction systems (nucleic acids/proteins)	
f) QC equipment (nanodrop, Qubit, bioanalyser, ELISA reader/washer) all with international standards	
g) Filing system for DBS at -80°C for one million samples	
h) Paraffin block storage system	
i) Insulated gloves and pre-barcoded tubes	
3. Sample management software	

a) integrated with automated retrieval system	
b) International standards such as HIPPA, ISO 9001:2015 and 21 CFR part 11 or equivalent compliant.	
c) Software should be a perpetual license and free upgrades including the requisite compatible hardware during the period of warranty and CMC	
d) Compatible with 2D bar-coded plasticware	
e) Multiple user with differential access	
f) Compatible with transfer of data from already scanned codes	
g) Onsite training in data management as and when required	
h) Computer with printer/scanner from market leaders with backup LIMS software for data transfer from other collection centers including but not limited to scanned consent forms, history forms, MTA, etc	
Sample management software with compatible state of art hardware, latest at the time of supply with a minimum 5 interfaces and expandable as per need	
Security level : RAID 1 server (Disk mirroring)	
Connected to Local LAN	
Wired Keyboard & Mouse Included	
Operating System: Compatible OS and anti-virus (128-Bit)	
Compatible UPS to be provided	
Easy to interface with other web based software	
Module should available to manage reagent and consumables (like cryotubes)	
Highly scalable as per requirement	
Able to customized modification in annotation and software as per user requirement	
4. Decontamination autoclave as per biomedical waste disposal guidelines 2018.	
a) Temp ranging from 120-150°C	
b) Pressure 15-55 psi	
c) Residence time of at least 30 minutes	
d) Capacity ~5 litres	
5. Site preparation	
a) Removal of existent fixtures and equipment and scrapping of the same	
b) Ambient temperature maintenance of 22°C in the whole area including where the unit is kept	
c) Sprucing up the whole building including tiling and whitewashing	
d) Reception area, office areas (scientists-2), technical officers rooms, sample receipt and distribution area, sample preparation lab, grossing room and area preparation, QC lab, washing room designed, finished and furnished (furniture, LED screen, computers).	
e) Electrical fixtures as required, including ACs	
f) LAN and high speed internet, telephone cabling	
g) Washroom facilities for men and women separate, with shower	
h) Drainage system	
i) Fire safety provisions	
6. Services and support	
a) Onsite support and management of the unit for 5 years with 2 (service engineer, IT person) personnel deputed on site	
b) Assist transfer of samples maintaining cold temp chain from collection centers for 1 year	

c) 5 years comprehensive and 5 years non-comprehensive warranty for the unit	
All components should have certificates of compliance in conformity with international standards and regulations or equivalent Indian standards.	