**Option2 uploaded template ( 5 page A4 limit)**

**Beamline Name:**

1. **Science case**

* Motivation
* Expected Impact on related research fields
* Innovation（optional）

1. **Description of key experimental methods**

2.1 **Description of key experimental methods**

2.2 Utilization of the HEPS characteristics (high energy, high brightness, high coherence)

1. **Beamline design**

3.1 Layout of beamline and experimental station

* Brief description to beamline and experimental station
* Optics design and layout
* Experimental station design and layout

3.2 X-ray optics design

* Source requirement: bending magnet, undulator, wiggler
* Energy range
* Photon flux required (coherent flux)
* Energy scanning range
* Energy resolution：monochromatic, pink beam, white beam
* Focusing requirement
* Coherence requirement (optional)
* Stability requirement
* others

3.3 Experimental station design

* Sample manipulation：Diffractometer, Rotation stage, etc.
* Sample or in-situ Sample environment: Temperature, Pressure, in-situ environment, etc.
* Stability requirement
* Detector requirement：point/area detector, Area detector(pixel size/number, frame rate, etc.)
* Data acquisition:：Data generation estimation (peak GB/s, TB/day)
* Data analysis：on-line data analysis software requirement, Computing power requirement for online data analysis（CPU/GPU performance and number）

3.4 Utilities requirement

* Beamline：Cooling water，Compressed gas，Electricity，Cryogenic、Lifting capacity， others
* Experimental station：cooling water, Compressed gas, Electricity, Cryogenic, Lifting capability, others

1. Reference

Notice：

HEPS is a national facility for public research, open to users around the world. For the beamlines constructed and invested by the users, at least 30% beam time must be allocated to the public beamtime. Besides the beamline construction investment, the operation cost is also supported by the investor (less than 10% of the beamline cost)