**Memorandum of Understanding**

between the

**Nuclear Research Group**

**Physics Department**

**Kent State University**

and the

**STAR HFT project at**

**Brookhaven National Laboratory**

**Approved by:**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_

Dr. Flemming Videbaek

**Contractor Project Director**

**Physics Department**

**Brookhaven National Laboratory**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_

Prof. Declan Keene

**Center for Nuclear Research**

**Department of Physics**

**Kent State University**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_

Dr. Thomas Ludlam

**Department Chair**

**Physics Department**

**Brookhaven National Laboratory**

This Memorandum of Understanding (MOU) is between the HFT project at Brookhaven National Laboratory (BNL) and the Nuclear Reseacrh Group (NRG) in the Physics Department at Kent State University, which together, are called the “Parties” to this agreement. The purpose of this MOU is to document the understanding between the parties for the design and fabrication phases of the Heavy Flavor Tracker project (“DOE MIE–01VB under Office of Nuclear Physics”) and to define responsibilities between the Parties for the execution of this work. Both Parties to this agreement share the scientific goals in STAR for the HFT project.

The HFT project in its entirety will be accomplished through a collaborative effort with STAR that will fabricate, install, and commission the Heavy Flavor Tracker in the STAR detector at the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory (BNL). The detector consists of a pixel detector, the intermediate silicon tracker (IST) and a refurbished Silicon Strip Detector (SSD). The primary scientific goal of the HFT is to make direct charm and beauty measurements at STAR.

This MOU does not constitute a legal or contractual obligation on the part of either Party. However, the Parties recognize that the success of the project depends on adherence to its provisions. The Parties agree to negotiate changes to this Memorandum of Understanding as needed to meet the evolving requirements of the HFT project.

Scientific manpower will be provided by NRG according to project needs and funding provided. FTE levels and specific skill-mixes will be such as to ensure, in the judgment of the Contractor Project Director that deliverables are provided and milestones met according to the project cost and schedule.

### Scientific and technical contributions

The STAR group agrees to make every effort to carry out its responsibilities consistent with the MOU. Changes to scientific and/or technical contributions shall be mutually agreed upon. Responsibilities are defined in the HFT Project Execution Plan (PEP), and the planned work in the Project Baseline Schedule. The planned activities for the offline software is defined in a separate software schedule

Contributions from the KSU group included

* Subsystem management of Project Software and coordination of calibration and offline software for HFT.
* Development of tools and software for analysis.

It is expected that the effort will continue into the data taking and physics analysis phase.

This Memorandum of Understanding will remain in force until the Parties mutually agree to modify or terminate.

The following scientific personnel will carry out the efforts for the HFT project and for the STAR offline software.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | Position | tasks | FY11 | FY12 | Fy13 | FY14 |
| Sipros Margetis | Physicist | Subsystem manager, calibration software | 0.25 | 0.45 | 0.5 | 0.5 |
| J.Bouchet/TBD | Postdoc | Simulation, calibration, tracking | 0.5 | 1.0 | 1.0 | 1.0 |
| Amilkar Quintero | Grad Student | Geometry, calibration, simulation | 0.3 | 1.0 | 1.0 | 1.0 |
| Jeremy Alford | Grad Student | Simulations | 0.1 | 0.2 | 0.2 | 0.2 |
| TBD | Grad Student | Simulations, Tracking | - | 0.3 | 1 | 1 |