



**ATLAS AGREEMENT
548/2015**

\$12400 from T227100	To T541500	11 May 2015
\$6200 from T256500	To T541500	11 May 2015
\$11200 from T542000	To T541500	11 May 2015
\$25400 from T275200	To T541500	11 May 2015
\$6200 from T541010	To T541500	11 May 2015
\$6200 from T541020	To T541500	11 May 2015
\$6000 from T550160	To T541500	11 May 2015
\$11600 from T549500	To T541500	11 May 2015
\$37600 from T205300	To T541500	11 May 2015
\$8400 from T273685	To T541500	11 May 2015
\$24000 from T183500	To T541500	11 May 2015
\$6200 from T274460	To T541500	11 May 2015
\$12200 from 34031	To T541500	11 May 2015

ATLAS AGREEMENT No. 548 / 15

Procurement of Readout Test Equipment

BETWEEN

The **ATLAS Inner Detector/ITK Subsystems and Institutions**

Represented by the ATLAS Resources Coordinator,

on the one hand, **AND**

SLAC National Accelerator Laboratory (SLAC),

Represented by the US ATLAS project manager,

on the other hand.

CONSIDERING THAT:

- The United States has signed the ATLAS construction MoU (RRB-D 98-44 rev.) and M&O MoU (CERN-RRB-2002-035);
- The US contributes to the Inner Detector (ID) sub-systems and the HL-LHC ITK upgrade;
- SLAC contributes to the Pixel sub-detector and has designed detector readout equipment that are required by the many test stands of the Pixel and Strip silicon detector community for both the continuing maintenance of the current detector, especially the newly installed IBL and DBM systems, and development for HL-LHC ITK upgrades, and is therefore requested to carry out the work package described hereafter (Article 2.1);

IT IS AGREED AS FOLLOWS:**ARTICLE 1 SCOPE OF THE AGREEMENT**

- 1.1 The purpose of this Agreement is to define the readout test equipment to be fabricated by SLAC for the test stand needs of the ATLAS ID subsystems and ITK upgrade community, and to compensate US ATLAS for the fabrication costs from the funds provisioned by ATLAS for the detector subsystems and the funds of the ATLAS ITK institutions with requested needs.

ARTICLE 2 OBLIGATIONS OF THE PARTIES

- 2.1 SLAC is responsible for fabricating the list of readout test equipment as described in Table 1 below with the listed unit costs. SLAC is also responsible for shipping them to either the requesting institutions, or to CERN for pickup. In the case of shipping to a non-US institution, the receiving institution is responsible for the payment of possible importing tax. The contributions to the cost from the ATLAS ID subsystems and ITK institutions are defined in Table 2 and Table 3 against the corresponding component counts requested. For the various optical connection ports on the delivered components, transceivers will *not* be included because the potential variations in preferred usage. Power supplies are also *not* part of the delivered components due to its variations between countries.

Components	Abbreviated name	Unit cost (US\$)
COB motherboard (<i>without DPM/DTM</i>)	COB	6200
DPM dual-RCE mezzanine	DPM	3700
DTM RCE mezzanine	DTM	1200
COB RTM with 16xSFP and TTC mezzanine	RTM	1800
HSIO-II mother board (<i>without DTM</i>)	HSIO-II	3500
HSIO-strip stave interface	Strip-I	900
Pixel HSIO-II 18 RJ45 I/O port interface	Pixel-I	1500
Pixel HSIO IBL stave interface	IBL-I	1300

Table 1: RCE/HSIO readout component description and unit cost.

Institution	COB	DPM	DTM	RTM	HSIO-II	strip-I	Pixel-I	IBL-I	Sum Cost	Budget
									US\$	charge US\$
Brookhaven National Lab	0	0	1	0	1	0	1	0	6200	6200
LBNL	0	0	1	0	1	0	1	0	6200	6200
NYU*	0	0	1	0	1	1	0	0	5600	1180
University of Illinois at Urbana-Champaign	0	0	1	0	1	1	1	0	7100	7100
University of Washington	0	0	1	0	1	0	1	0	6200	6200

Table 2: Component requests and costs by institution for US institutions. The “Sum Cost US\$” column is funds needed at SLAC to execute the production. The “Budget charge US\$” column is amount to be charged to the requesting institution. In the special case of NYU, there was a credit of \$4420 left at BNL/USATLAS from previous HSIO production that is used now to offset the charge to NYU.

Institution	COB	DPM	DTM	RTM	HSIO-II	strip-I	Pixel-I	IBL-I	Sum Cost	CERN
									US\$	Account
KEK	0	0	2	0	2	0	2	0	12400	T227100
Max-Planck-Institut Munich	0	0	1	0	1	0	1	0	6200	T256500
Freiburg	0	0	2	0	2	2	0	0	11200	T542000
University of Adelaide	1	2	1	1	2	2	0	0	25400	T275200
University of Geneva	0	0	1	0	1	0	1	0	6200	T541010
University of Bern	0	0	1	0	1	0	1	0	6200	T541020
Ljubljana	0	0	2	0	2	1	0	1	11600	T549500
DBM collaboration	0	0	1	0	1	0	0	1	6000	T550160
UCL	1	4	4	1	2	0	2	0	37600	T205300
University of Goettingen	0	1	1	0	1	0	0	0	8400	T273685
Oxford	1	4	1	1	0	0	0	0	24000	T183500
IFAE Barcelona	0	0	1	0	1	0	1	0	6200	T274460
CERN PH-ADE-ID	0	0	2	0	2	0	1	1	12200	34031

Table 3: Component requests and costs by institutions for non-US institutions and subsystems, and the CERN accounts for the cost charges. The “Sum Cost US\$” column contains exact charges to each institution and the same amount needed for SLAC to execute the production.

ARTICLE 3 FUNDING

3.1 The equipment fabrication costs incurred at SLAC during the execution of the work package described in Article 2.1 above amount to a total of \$204,900 (incl. overhead) combining both US and non-US requests listed in Table 2 and Table 3 above. This amount will be paid by the collection of shared contributions from the requesting institutions and subsystems according to Table 2 and Table 3. For non-US institution and subsystem

requests, the contributions will be collected through CERN TID according to the amounts and corresponding CERN accounts listed in Table 3, using exchange rate 'B' defined in CET (exact date to be fixed). For the requests in Table 2 from US institutions, the contributed funds are expected to be from each institute's existing funds without subsistence of any dedicated US ATLAS fund for this production, with one exception of NYU who has a credit of \$4420 left at BNL/US ATLAS from a previous round of HSIO production which can be used to offset cost to NYU for this round of production. US ATLAS will deduct the agreed amount from the requesting US institution's M&O budget while the institution will use its own designated funding source to compensate internally. US ATLAS is responsible to compensate SLAC for the total amount of \$204,900 needed for the production through the SLAC M&O MPO contract with BNL.

ARTICLE 4 **DURATION OF THE AGREEMENT**

- 4.1 This Agreement is valid until July/30/2015. This agreement supersedes previous signed MOUs and ATLAS agreements on the same round of production.

ARTICLE 5 **CO-ORDINATION AND ADDRESSES FOR CORRESPONDENCE**

- 5.1 All documents concerning this agreement shall bear the reference: "ATLAS Agreement No. 548/15"

- 5.2 The execution of this agreement is co-ordinated by the following persons:

for the ATLAS Inner Detector subsystems and Institutions:

ATLAS Resource Coordinator, CERN - Department PH, CH-1211 Geneva 23, SWITZERLAND (attn. Fido Dittus)

for the ATLAS HL-LHC upgrade ITK project:

ATLAS ITK Project Leader, STFC Rutherford Appleton Laboratory – Particle Physics Department, Didcot, OX11 0QX, UK (Attn. Steve McMahon)

and

ATLAS ITK Resource Coordinator, KEK - Tsukuba, Ibaraki 305-0801, Japan – (Attn. Soshi Tsuno)

for US ATLAS:

US ATLAS Project Manager, MS 510A, Brookhaven National Laboratory, Upton, NY 11973-5000 (Attn: Srinu Rajagopalan).

for SLAC:

SLAC – ATLAS Department Head, Stanford National Accelerator Laboratory, Menlo Park, CA 94025-7015 (Attn: Su Dong)

for Requesting Institutions:

Institution	Signing Personnel	CERN Account
KEK	Yoshinobu Unno	T227100
Max-Planck-Institut Munich Freiburg	Richard Nisius	T256500
University of Adelaide	Ulrich Parzefall	T542000
University of Geneva	Paul Jackson	T275200
University of Bern	Giuseppe Iacobucci	T541010
Ljubljana	Michele Weber	T541020
DBM collaboration	Marko Mikuz	T549500
UCL	Fido Dittus	T550160
University of Goettingen	Andreas Korn	T205300
Oxford	Arnulf Quadt	T273685
IFAE Barcelona	Tony Weidberg	T183500
CERN PH-ADE-ID	Sebastian Grinstein	T274460
Brookhaven National Lab	Heinz Pernegger	34031
LBNL	Francesco Lanni	
NYU	Maurice Garcia-Sciveres	
University of Illinois at Urbana-Champaign	Andrew Haas	
University of Washington	Benjamin Hooberman	
	Shih-Chieh Hsu	

Table 4: Signing personnel for requesting institutions and corresponding CERN accounts for non-US requesting sources.

ARTICLE 6 ARBITRATION

- 6.1 Any differences arising in the context of this agreement will be submitted to the ATLAS Spokesperson who will propose solutions in the best interest of the Collaboration.

(F. Dittus)
Resources Coordinator
ATLAS Collaboration
Date:

(S. McMahon)
ITK Project Leader
ATLAS Collaboration
Date:

(S. Tsuno)
ITK Resource Coordinator
ATLAS Collaboration
Date:



(S. Rajagopalan)
Project Manager
US ATLAS
Date: 1 June, 2015

(Su Dong)
Team Leader
SLAC ATLAS group, US
Date:

(F. Dittus)
ATLAS DBM Collaboration
Date:

(M. Mikuz)
ATLAS Group
Ljubljana, Slovenia
Date:

(H. Pernegger)
PH-ADE-ID group
CERN, Switzerland
Date:

(M. Weber)
ATLAS Group
University of Bern
Switzerland
Date:

(G. Iacobucci)
ATLAS Group
University of Geneva
Switzerland
Date:

(S. Grinstein)
ATLAS Group
IFAE Barcelona
Spain
Date:

(R. Nisius)
ATLAS Group
Max-Planck Institute for Physics
Munich, Germany
Date:

(U. Parzefall)
ATLAS Group
University of Freiburg
Germany
Date:

(A. Quadt)
ATLAS Group
University of Goettingen
Germany
Date:

(A. Weidberg)
ATLAS Group
Oxford University
UK
Date:

(A. Korn)
ATLAS Group
University College, London
UK
Date:

(Y. Unno)
KEK ATLAS Silicon Group
Japan
Date:

(P. Jackson)
ATLAS Group
University of Adelaide
Australia
Date:

(F. Lanni)
ATLAS Group
Brookhaven National Laboratory
USA
Date:

(A. Haas)
ATLAS Group
New York University
USA
Date:

(B. Hooberman)
ATLAS Group
University of Illinois at Urbana-Champaign
USA
Date:

(M. Garcia-Sciveres)
ATLAS Group
LBNL
USA
Date:

(S. Hsu)
ATLAS Group
University of Washington
USA
Date: