

## **ATLAS SOFTWARE AGREEMENT No. 01/2001**

### **Development and Maintenance of a Common ATLAS Software Control Framework, and of a Data Dictionary for ATLAS Software**

BETWEEN

the **ATLAS Collaboration**

on the one hand,

AND

the **U.S. ATLAS Physics and Computing Project**, and the **Laboratoire d'Annecy le  
Vieux de Physique des Particules**

on the other hand,

## **CONSIDERING THAT:**

- Funding Agencies: the Department of Energy, the National Science Foundation (Physics Division), and the Institut National de Physique Nucléaire et de Physique des Particules have signed the Memorandum of Understanding for Collaboration in the Construction of the ATLAS Detector (ATLAS RRB-D 98-44 rev.);
- the ATLAS Resource Review Board, in its meeting held on 25 October 1999, has been informed of the starting of preparations towards a Memorandum of Understanding for ATLAS Computing, not covered in the document ATLAS RRB-D 98-44 rev.;
- the ATLAS Collaboration Board, in its meeting held on 26 June 2000, has endorsed the policy of concluding Software Agreements;

## **IT IS AGREED AS FOLLOWS:**

### **ARTICLE 1            PURPOSE OF THIS AGREEMENT**

- 1.1    The purpose of this Agreement is to define an intended software commitment of the U.S. ATLAS Physics and Computing Project (henceforth referred to as U.S. ATLAS PCP), and the Laboratoire d'Annecy le Vieux de Physique des Particules (henceforth referred to as L.A.P.P.) in the ATLAS experiment set up at the LHC at CERN.
- 1.2    The ensemble of Software Agreements would be expected to form part of the Computing Memorandum of Understanding, if it is decided that the latter should contain a Software component.
- 1.3    This Agreement is limited to describing the activities related to the Common ATLAS Software Control Framework, and to the Data Dictionary of ATLAS Software, without prejudicing potential contributions of the U.S. ATLAS PCP and L.A.P.P. in other areas of ATLAS Computing.

### **ARTICLE 2            SCOPE AND VALIDITY**

- 2.1    With this Agreement:
  - a) the U.S. ATLAS PCP undertakes to build and maintain a Common ATLAS Software Control Framework (item 3.1.2 in the Work Breakdown Structure for ATLAS Offline Computing as of 2001/03/29). The Common Atlas Software

Control Framework is described in more technical detail in Technical Annex 1 to this Agreement. The Technical Annex 1 is an integral part of this Agreement;  
and

b) the U.S. ATLAS PCP and L.A.P.P. undertake to build and maintain the tools and infrastructure required for a Data Dictionary (item 3.1.9 in the Work Breakdown Structure for ATLAS Offline Computing as of 2001/03/29). The Data Dictionary for ATLAS Software constitutes a key component of the Common ATLAS Software Control Framework. The Data Dictionary is described in more technical detail in Technical Annex 2 to this Agreement. The Technical Annex 2 is an integral part of this Agreement.

2.2 This Agreement implies in particular

- the timely delivery of an initial set of design, implementation code and documentation (henceforth called "the Software");
- the timely delivery of future releases of the Software with further functionality, as described in the Technical Annexes 1 and 2;
- maintenance (bug fixes, ports to new ATLAS-supported platforms, changes required by modifications of the interfaces, minor new functionality etc.) of the Software;
- the support for members of the ATLAS Collaboration that use the Software.

2.3 As an indicative figure, the level of effort, in full-time equivalents per year, is expected to be roughly as follows:

a) for the Common ATLAS Software Control Framework:

Purpose	Qualification	2001	2002	2003	2004	2005
Development	Software Engineer	3.5	3.5	3.5	3.0	2.5
Maintenance	Software Engineer	0.5	1.0	1.0	1.0	1.0
Support	Software Engineer	1.0	0.5	0.5	1.0	1.5

and

b) for the Data Dictionary:

Purpose	Qualification	2001	2002	2003	2004	2005
Development	Software Engineer	2.0	2.0	-*	-*	-*
Maintenance	Software Engineer	0.5	0.5	0.2	0.2	0.2
Support	Software Engineer	0.5	0.5	0.3	0.3	0.3

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\* The level-of-effort estimates for developing the Data Dictionary in 2003 and beyond have not yet been defined.

A Software Engineer is a person holding a university degree in Computer Science, or a physicist with strong knowledge and experience in software technologies, or another scientist with equivalent education and experience.

- 2.4 The scope of this Agreement can be changed by amending the current Agreement, if all concerned parties agree.
- 2.5 This Agreement covers the period beginning when it has been signed by all involved parties, and ending in December 2005. It can be extended in time by amending the current Agreement, if all concerned parties agree. It is expected that an extension would be agreed to cover at least the maintenance and user support of the Software for the lifetime of the experiment, but at the very least for two years past the start of the active data taking.
- 2.6 Any party to this Agreement can request an early termination, which requires the endorsement of the National Computing Board (NCB). This does not imply termination of the Agreement for all other parties.

### **ARTICLE 3                      BOUNDARY CONDITIONS**

The Software shall comply with all guidelines in use for ATLAS software. In particular:

- 3.1 The Atlas Computing Coordinator, or a person designated by him, has the overall technical responsibility.
- 3.2 The rules governing Atlas Software development<sup>1</sup> shall be respected. In particular:
  - For the code implementing the Software, the baseline choice language of ATLAS (ANSI C++ as of March 2001) shall be used, unless an exception is explicitly authorised by the ATLAS Computing Coordinator. The code shall comply with the ATLAS Coding Conventions<sup>2</sup>. The language used to describe the data in the Data Dictionary is addressed in Technical Annex 2;
  - Documentation shall be provided and maintained;
  - A testing plan shall be provided; the Software shall be validated;
  - The Software shall be developed and maintained in the central ATLAS code repository, in compliance with the repository policy.

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<sup>1</sup> A Process for Atlas Software Development, version 2.0 of 2000/09/26, [http://cern.ch/Atlas/GROUPS/SOFTWARE/OO/qc/QC\\_Process\\_v2.ps](http://cern.ch/Atlas/GROUPS/SOFTWARE/OO/qc/QC_Process_v2.ps)

<sup>2</sup> ATLAS C++ Coding Standard, Specification, Version 1.0 of 2001/01/30, [http://cern.ch/Atlas/GROUPS/SOFTWARE/OO/qc/C++\\_Coding\\_Standard.pdf](http://cern.ch/Atlas/GROUPS/SOFTWARE/OO/qc/C++_Coding_Standard.pdf)

- 3.3 The Software shall comply with guidelines established by the ATLAS Architecture Task Force<sup>3</sup>, and the ATLAS Architecture Team. Interfaces with other parts of the ATLAS software shall be agreed upon with the parties concerned, and with the Chief Architect.

In addition, the following conditions apply:

- 3.4 The delivery dates of the Software should respect the schedule of the ATLAS Computing and Physics project. Schedule details as of end May 2001 are contained in Technical Annexes 1 and 2.

The U.S. ATLAS PCP and L.A.P.P. shall inform the ATLAS Computing Coordinator, or a person designated by him, as soon as it is apparent that any of the delivery dates will likely not be met. The reason for the delay should be clearly explained, and a plan how to get back to schedule should be provided.

- 3.5 Members and/or member institutes of the ATLAS Collaboration not involved in this Agreement have the right to suggest requirements to and negotiate participation in the Software. If the interested parties cannot reach common conclusions on decisions to be taken, the ATLAS Computing Coordinator or a person designated by him shall be asked to decide.
- 3.6 In appointing the Chief Architect, the Computing Coordinator will have appropriate consultation with the institutes involved in this Agreement.

## **ARTICLE 4            ARBITRATION**

In case of disagreements between the partners on the execution of this Agreement every attempt shall be made to resolve them in an amicable way. If this cannot be achieved, the Spokesperson of the ATLAS Collaboration is asked to arbitrate.

## **ARTICLE 5            CONTACTS AND REPORTING**

The technical contact persons, who are responsible for implementing and conducting the planned work programme corresponding to this Agreement, are David R. Quarrie (LBNL) for the Control Framework, and Craig E. Tull (LBNL) for the Data Dictionary. David R. Quarrie reports to the ATLAS Computing Coordinator or a person designated by him. Craig E. Tull reports to the Chief Architect. The U.S. ATLAS PCP and L.A.P.P. can propose a change of the technical contact persons; this change requires the endorsement of the Atlas Computing Coordinator, or the person designated by him.

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<sup>3</sup> Report from the ATLAS Architecture Task Force, Version 2.7 of 1999/12/16, [http://cern.ch/Atlas/GROUPS/SOFTWARE/OO/architecture/atf/report/report\\_2.7.pdf](http://cern.ch/Atlas/GROUPS/SOFTWARE/OO/architecture/atf/report/report_2.7.pdf)

## ARTICLE 6            REFERENCE

All documents concerning this Agreement shall bear the reference:

“ATLAS Software Agreement No. 01/2001”

Signed on xxxx in xxxx,

(Norman McCubbin)  
ATLAS Computing Coordinator

(Markus Nordberg)  
ATLAS Resource Coordinator

(Thomas Kirk)  
Representative of the U.S. ATLAS  
Physics and Computing Project

(John Huth)  
NCB representative for the United States

(Jacques Colas)  
Representative of the Laboratoire  
d'Annecy le Vieux de Physique des  
Particules

(Etienne Augé)  
NCB representative for France

Endorsed by the National Computing Board on xxxx

*This page clearly needs to be revised, all names checked, titles added etc.*