

Bob, I'm commenting (in blue) Ian's text, and adding a few general comments at the end. I'm also tempering with his diagrams.

Can we iterate one more step?

Eduardo

## **The Organizational and Functional Structure of ALMA in Chile**

Note by I F Corbett, 21 June 2001.

### **Summary**

1. A revised model for the organizational and functional structure of ALMA in Chile is presented. It builds on the extensive common ground of earlier approaches, drawing on their strengths and adhering to the fundamental principle of ALMA as a single joint project. The proposed model ensures the Parties to maintain visibility in Chile and to retain the right to own capital assets contributed to ALMA, and it allows the Executives of the Parties to contribute staff and involve their communities in the operational ALMA Observatory.

### **Background**

2. The ALMA partners expect to sign the ALMA Agreement for the Construction and Operation of ALMA by the end of 2001. Japan is expected to be a Party to this Agreement. The major Parties to the Agreement intend to contribute to ALMA in Chile. In the case of the European Southern Observatory (ESO), this requires the agreement of the Chilean government, probably in the form of an amendment to the treaty under which ESO operates in Chile. In the case of Associated Universities, Inc. (AUI), this requires AUI's current agreement with the University of Chile under law 15172 to be changed, with the agreement of the Chilean Foreign Ministry, to cover ALMA and in the case of the National Astronomical Observatory of Japan (NAOJ) Law 15172 can also be used.

### **THE ALMA AGREEMENT**

3. The ALMA Agreement is the key ALMA document. It will specify, in main text or Annexes, the role, responsibilities and authority:

The ALMA Agreement : is it a legally-binding document? Can ESO sign such agreements? "Based on the different status of the parties the possibility of signing a legally-binding Agreement will be explored" (?)

- of the ALMA Board;
- of the ALMA Director and his/her accountability/reporting line;

- of the Executives and their reporting line;
- of the Executives in Chile;

It will also address the need for and scope of activities for one or more entities under Chilean law.

4. It will also specify:

- The legal relationship of the staff, assets, or liabilities of one Executive to those of the others;
- The explicit agreement of the Executives that they will assign to management by the ALMA Director those resources (staff and materials) necessary to carry out their tasks, and that they will provide the resources needed to support the work of the Director's Office;
- The explicit agreement of the Executives to share resources and coordinate working conditions.

So far so good....

#### **ALMA Structure**

5. The ultimate management authority for the project resides with the ALMA Board, whose authority comes from the ALMA Agreement. The ALMA Board is not a legal entity. The Parties each appoint an Executive Agency to conduct their assigned ALMA responsibilities. The Executives are legal entities. Their job, in simplistic terms, is to turn money from the partners into deliverables to the project under the control of the joint ALMA Project Office (APO). The authority and responsibilities of the Board and the ALMA Director are extremely important in ensuring the powerful and effective management approach needed to deliver such a complex project to cost and schedule.

So, The APO is in a very real sense the ALMA Project.

6. There is a consensus on the structure during construction: there will be a single integrated APO with a single ALMA Director (AD) who will 'contract' with the Executives on behalf of ALMA to deliver the components of ALMA. The APO will need to be hosted by an organization that can provide the necessary infrastructure to enable it to function efficiently. The details have yet to be fully explored. The Executives will have to maintain close contact with the APO.
7. There is an emerging consensus on the structure in Chile, in that during construction there will be a branch of the APO in Chile. As construction moves into commissioning and then operations, the center of gravity of ALMA, the APO, and the ALMA Director move to Chile. The APO in Chile would then be analogous to the APO during construction.

Careful with words in 6 & 7. Hosting by any given organization does not imply “under the umbrella of that organization”. During construction the Chile branch of the APO might be located at ESO’s to tap on their business office, or might be located in a neutral place with good fax and communication facilities. Likewise if necessary an APO outside of Chile might be located in CV. Where would the Director be located?

8. The role of the Executives can be extended into Chile, where each can operate under the terms of their agreement with Chile (i.e. ESO Treaty or Law 15172). That means that each maintains its own separate identity in Chile, can import and own the capital equipment that it contributes to ALMA, and can accredit staff to live and work in Chile. This meets a major requirement of the Parties. The Executive presence in Chile to be set up for ALMA can be quite modest, since their function is essentially limited to certain important but auxiliary tasks.

So far so good...

9. The APO in Chile (and the branch office during construction) requires a host organization that can provide the necessary infrastructure to enable it to function efficiently. It is proposed that ESO could provide the basic framework for the APO in Chile. This role of ESO is additional to, and should not be confused with, ESO’s role as the European Executive. The advantages of utilizing ESO’s Treaty status and long experience in Chile have been debated at some length. The issues that arose in that debate largely concerned legal status and the ownership of capital assets. The extension of the Executives into Chile under their own separate ‘permissions’ meets these concerns.

Here the argument in favor of ESO as a host is predicated on the basis of infrastructure, but then “framework” creeps in. Under the US proposal of “assigned tasks but shared responsibilities” ESO’s experience and manpower can be used effectively while keeping the APO as a loose structure under the respective status of the Executives. Essentially the power resides on the Director who holds power of attorney from all executives to discharge its responsibilities. It is understood that the legal representative is the Director who carries the accreditation of his/her own Executive but the representation of the joint project.

10. Each of the Parties has its own ‘permission’ to participate in the single joint project, ALMA, and to establish its own identity in Chile, but these permissions are not free standing and are linked to the existence of the single joint project.

Why? All that is needed is that permissions include the right to participate in ALMA. ESO runs two other Observatories, AUI might want to do likewise in the future.

11. ESO assists in supporting the APO in Chile by providing the framework and specific services that enable ALMA to operate in Chile. This would be done on the basis of terms and conditions to be set out in the ALMA Agreement on the one hand, and on the Parties’ agreements with Chile to participate in ALMA on the other.

Since clearly the APO is ALMA in Chile, this is unacceptable to the US side. Again ESO's support can be delivered to the Director's office on the basis of "assigned tasks but shared responsibilities" without recourse to any specific legal framework.

12. In this approach ALMA uses ESO, because of its status, experience, and competence, to carry out certain functions on behalf of, and under the control of, the ALMA Director. In effect, in this role ESO acts not as a Party or an Executive but rather as a supplier of infrastructure and services to the APO.

The code words here are status, experience, and competence. ESO's experience in building observatories is proven, as is that of NRAO. The competence of NRAO in building radio-observatories is also proven and arguably more so in this specific case than that of ESO. As for the status, making the APO an ESO structure, that is under ESO status, is unacceptable, as we argue that ALMA in Chile is the APO.

13. ESO could provide, or arrange for the provision of, a range of services such as accommodation and communications. Acting on behalf of ALMA and under the control of the ALMA Director, ESO would provide the framework which would enable the ALMA Director to:

- Interface with local, regional, and national government on all common matters concerning ALMA land and its use;

Then again it's ESO that is representing the project in Chile.

Deal with all common legal and related matters regarding ALMA in Chile (issues specific to individual Executives would be dealt with by them);

Then again it's ESO that is representing the project in Chile, even if we keep property of assets.

- Interface with the Chilean entity or entities that ALMA proposes to use or to establish in Chile;

Then again it's ESO that is representing the project in Chile.

- Provide, or secure the provision of, local goods and services for use by ALMA;

As part of this Executive's task

- Place contracts in Chile or elsewhere, where it was advantageous to ALMA to do so.

## FUNCTIONAL STRUCTURE

14. The functional structure proposed for ALMA during construction is illustrated in Figure 1 (these diagrams are meant to be illustrative, and too much should not be read into details like the relative size or positioning of boxes, etc.). The key features are:

- ALMA is a single joint project of the Parties to the ALMA Agreement;
- ALMA is constructed and operated by the three Executives, AUI, ESO and NAOJ acting under the ALMA Agreement, the authority of the Parties, and appropriate permissions from Chile;

I would argue this is not consistent with ESO's role as described here under 12, 13 and 15. But yes, this is what we want.

- The Executives act under the managerial control of the ALMA Director, who is responsible to the ALMA Board;

Ian doesn't clearly spell out how the Director is generated. He/she could be an ESO employee, or could be an employee of one of the other Executives acting under power of attorney from ESO. This is interesting. If the second option is acceptable to IAN, then the issue of delegation of power by ESO (see my comments below) will not arise.

The ALMA Director represents ALMA worldwide, including Chile;

- The Executives maintain a presence in Chile;
- Each Executive is responsible for importing the materials it builds for ALMA, and for maintaining ownership and accountability of those materials in Chile;
- Each Executive is responsible for assigning to ALMA the staff necessary to carry out the tasks for which they are responsible.

So far so good. But notice the importance of having a Director that could be an employee of any Executive and not necessarily under ESO "framework".

15. The functional structure proposed for ALMA during operations is illustrated in Figure 2. The key features, in addition to those above where they remain applicable, are:

- under the authority and control of the ALMA Director, ESO provides the framework and specific services to support and enable ALMA to operate in Chile;
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In agreement, but lest redefine "framework"

- ESO engages the services of a one or more entities under Chilean law, which will, amongst other things, hire local Chilean staff for ALMA, under Chilean labor law;
- All the staff assigned to ALMA by the Executives, or procured for ALMA through the Chilean entity or entities, work under the direction of the ALMA Director.

COMMENT: It seems we're in basic agreement with Ian in terms of most principles:

- We keep individual ownership and representation
- We build ALMA as a joint project of the Agencies via the Executives

- We have a centralized project via a Director's office under the authority of the board. Whether we have one or two Project offices is open to debate. From a managerial point of view one is better, and located in Chile if possible. But two are possible with a mega-director outside.
- Notice that Ian doesn't even mention issues of accounting that so worried Daniel.

We are in disagreement however as of the legal status of ALMA within Chile. We at NARK argue that the basic principles enunciated above are consistent with and can be applied by a joint multi-lateral office.

Ian's case for ESO providing the legal "framework" is predicated on the basis of superior status. This true in theory as ESO is indeed an International Organization. However for such a status to fully apply in Chile to ALMA it seems ALMA should become an ESO Observatory, otherwise the specific permissions and prerogatives ESO **must** seek in Congress to **participate** in ALMA might be more restrictive. None of them are transferable in any case, as ESO acknowledges itself. So Ian's case is weak unless we accept being part of an ESO observatory. And even then, given the fact that the land will not be ESO's, it's unlikely that certain land-related prerogatives effective at La Silla and Paranal will exist at Chajnantor where the land is, in addition, to be shared with other projects.

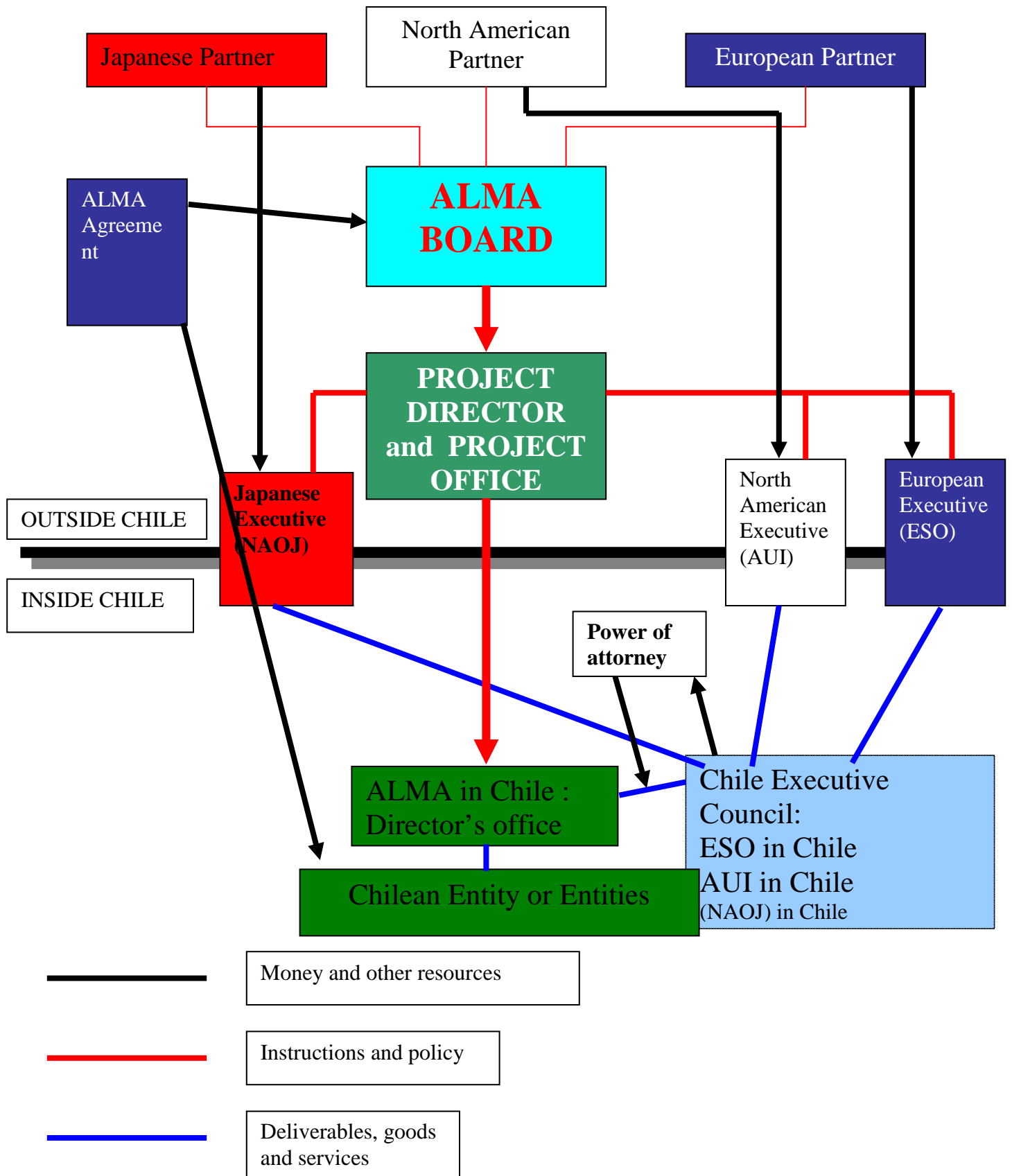
Our model on the other hand is constructed on the basis that a centralized efficient unified organization can be realized by delegation of power via legal instruments. It is in that way that we make ALMA a Federation which is more than the sum of its parts.

ESO might object to such on the basis of its status. AUI legal counsel in Chile asserts however that nothing prevents ESO from providing a non-ESO employee with power of attorney. POA can be written in very specific and restrictive ways. A model can be constructed by the ALMA board and incorporated into the ALMA Agreement (the Constitution). The ALMA agreement can be co-signed by Chile.

A comment on ALMA within and outside of Chile: ALMA needs a legal status within Chile due to specific import permits and legal exceptions (VAT, etc.). As a "federation" we have a Constitution (the ALMA agreement) and equivalent permits for all members. Outside of Chile the constitution continues to operate, but a legal status is not needed in principle. It remains to understand how we will operate the Integration Centers in the USA, Europe and Japan that might require Import/ Export permits.

I propose that we merge our respective proposals for ALMA, using where possible Ian's write-up with a preamble stating Principles, and including the notion of a federated project under legal delegation of power within Chile.

• **Figure 1: ALMA Construction**



**Figure 2: ALMA Operations**

