RETINA-France Pre-Kickoff Meeting
7 June 2001
ACRI-ST, Sophia Antipolis, FR

The objective of the meeting was the definition of the roles of each participant in the project and the associated budgets.

The meeting started with 3 informal presentations:
Jennifer Haase - Overview of the RETINA Project
Kurt Feigl - The Application of Interferometry to studying hazard triggering.
Christophe Delacourt - The Potential for Studying Landslides with Interferometry and Imagery

EC described the work to be carried out by the team led by the Geosciences Azur, which includes ULP in Strassbourg, Universiy of Lyon, and ISTE Besançon.

EC will be leaving Geosciences Azur in the month of August to take up a position in the US and will not be participating directly in the RETINA project.

WP 3300 Development of NRT CGPS deformation/hydrology monitoring system is a workpackage that will be carried out entirely at the CNRS-GA. The person who will be responsible is still to be defined, but Jean Virieux will take the leadership of the project in the interim and guarantees that the CNRS-GA will take responsibility for completing the work.

PRB pointed out that the NRT latency could be extended to > 6 hours that would require less development effort if it was not possible to find a replacement for EC. JH pointed out that there is also a requirement for portability for the other partners that will use the developed system.

In *WP 4210 CGPS hydrological observations in the Alps laboratory*, Guglielmi and Maquaire will participate in planning where to put the GPS measurement equipment. The rest of the task can and will be assured by the post-doc that is to be hired by CNRS-GA for the project.

WP 4220 INSAR aerial and satellite imagery in the Alps natural laboratory is a workpackage that will be carried out entirely by CD at UCB, Lyon. With existing data from past campaigns it is not possible to compare or validate INSAR with GPS. In order to carry out future campaigns, CD proposes add a new innovation to the project to use a drone airborne optical imagery system. This will not be specifically identified in the WP description, however. It will be carried out to the extent possible, depending on obtaining complementary funds from another source.

YG suggests that the DDE be involved in the project: Jean-Louis Durville from Ponts et Chaussee Paris, Gilles Seve from CETE. These people are responsible for monitoring Clapiere and should be involved to facilitate obtaining data. JPM suggested that Patrick Vautrin from RTM Digne be involved for the Barcelonette landslides. JH said the DDE is mentioned in the user workpackages in the original plan and will be invited to participate in the user working group meetings.

AI	YG (ISTE)	Provide addresses for Durville and Seve	10 June 2001
AI	JPM (STR)	Provide addresses for Vautrin	10 June 2001

AI JH (ACRI) Send invitation to kickoff user working group meeting to DDE/RTM along with a copy of the workpackages 10 June 2001
WP 4310 CGPS observations in the Azores natural laboratory requires experienced person to train Azores participant during a 12 month stay. Some options are to do it in Toulouse with KF, in Paris with Briole, or Purdue with EC, though the latter is difficult to arrange travel to the US for the EC. KF thinks the 4 person-months of CNRS-GA for this task should remain associated and be carried out in the same place as the 12 month training. This point remains unresolved.

AI EC(CNRS-GA) Contact Gaspar to find out what solution he would prefer for training 10 June 2001

The proposed activities and participant roles for WP5300 Development of EQ-LS-HY coupling model and applications to Alps was described by JH. YG and JPM both pointed out that they plan to carry out numerical modeling studies on the Clapiere and Barcelonette landslides in addition to the tasks already contained in the workpackage. A short description follows:

YG: At ISTE, they are working towards numerical modeling on La Clapiere of hydrology. With the existing data, they can make a numerical model of groundwater flow in a rock slope. He pointed out that the WP mentions poroelastic models which are not adpted, they need to use fractured reservoir modeling. They do this with ITASCAS DREYFLOW (sp?) where they can define fractures with porous blocks, and can model a slope of any dimensions. The model takes into account quick flow that passes through the fractures. They are planning these modeling activities starting in Sept-Oct.
The following step is to couple the groundwater model with the mechanical model 3DECK (sp?) of slope failure. They do not know how to restitute the failure movement, but they can calculate the realistic sate of stress by the hydro--mechanical stress in the rocky slope and see if they are near failure. The 3D model is calibrated with data from Clapiere displacement and groundwater. However, they do not measure groundwater pressure directly, they calculate it from values of chemical concentrations in the water. The model has the capacity to include dynamical calculations, and there is expertise to do this at Nancy, but that is currently beyond the scope of the activities planned at ISTE.

A third step, which is a new idea, is to try to improve the model by introducing the chemistry in the model. Reactive transport is important because they see important alteration of fractures that change the properties of the fractures and may lead to changes in the probability of landslide motion. An example is the same storm that happens every year at a landslide, but it is after the 10^{th} year that the landslide fails. It may be due to changes in the mechanical criteria because of the geochemical alteration. This has the potential for refining the temporal interaction.

AI YG Provide short description of dynamic calculation capabilities of 3DECK(sp?) 10 June 2001

JPM: In the MOTE project (Ministere de Recherche) they (ULP) is in the process of testing several models for motion. In the past EC projects, colleagues from Netherlands (van Asch) modeled the relation between the precipitation and groundwater usin the 3D model called EPL. STR will be testing in the month of August models for the spatial data they have from the nappes.

They are also using the rigid-plastic mechanical model called FLAC3D (sp?) to model the displacement, given the groundwater. There is also the BSL that is using the code VITALE-3D (sp?) to model the displacement which also includes visco-elastic effects.

RESOLUTION ISTE and ULP will both take on roles of numerical modeling for the La Clapiere and Barcelonette landlides, respectively, in WP5300.

AI JPM (STR) add a few sentences to WP5300 describing their modeling plans 10 June 2001
AI ISTE add hydrogeological/mechanical modeling description to WP530010 June 2001.

JH asked for ISTE and STR input on what parts of these case study results will be possible to generalize for the regional coupled hazard analysis. JPM replied that 1 porous site and one rocky fractured site will allow generalization to the different kinds of landslides present in the Alps. YG explained that these 2 landslides have passed all stages of landslide evolution that are typical of the Alps. 6-8 types of mechanisms exist in La Clapiere, out of the 9-10 possible types that have been defined. YG said that a valuable result is that the 2 case studies will show whether or not it is possible to successfully model the slides given the variability, and to see if the measurements are the appropriate ones for predicting future motion.

PRB pointed out that ISTE and STR include only the landslide phenomena and not the EQ phenomenon, and that the objecte of the WP is to build a system that has this coupling. It appears that ISTE and STR will not directly contribute to the seismic coupling tasks. ACRI-ST will investigate how the safety factor evolves in time because of chamical factors, and meteorology, but also how the safety factor evolves due to seismic shaking. It is the role of ACRI to use first order tools for testing this type of analysis rather than relying on models (such as proposed by UCAM) that may be too specialized, and which are difficult to generalize. KF suggested ACRI putting person months into the UCAM workpackage 3400, but JH said that doesn't help the problem of generalizing the models.

In the *WP6200 Coupled EQ-LS-HY hazard analysis in the Alps*, STR will be responsible for providing the database of landslide related events in the Barcelonette basin, from 1800 to present, as input to the coupled model analysis.

JPM said the their EC project ALARM is funded, whose aim is to produce hazard, vulnerability, and risk GIS maps at the 1:1000 scale within the French study area.

JH pointed out the difference between RETINA and ALARM: RETINA will not create landslide hazard maps, only the coupling with the seismic hazard is going to be mapped. The distinction between RETINA and ALARM will be mentioned in the workpackage.

EC presented the budget proposition for the whole CNRS-GA team. KF pointed out a possible problem with overhead costs for the postdoc

AI EC(CNRS-GA) Check overhead costs of postdoc 10 June 2001

Discussion on budget: CD gave the following estimates for costs for Lyon - 6000 Euros for images, 6000 Euros for field work, 20000 Euros for a optical imagery drone. YG requested funds for a DEA student or a part of a postdoc to complement the PNRN funding. Their

PNRN results will be known 18 June. JPM gave estimates of the cost, primarily for maintenance of the observation operations in the range 5000-10000. YG proposed that it is possible for the same student (thesard would be better than DEA) to work on both slides.

RESOLUTION: The budget will be split as follows
10000 Euros ISTE Besançon
10000 Euros ULP Strassbourg
25000 Euros Lyon
77600 Euros (the rest) CNRS-GA
These figures include the travel budget for the respective partner.

AI JH (ACRI-ST) Provide meeting schedule and list of required attendees 10 June 2001.

Summary of RESOLUTIONS:

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Summary of Action Items to be carried out by 10 June 2001:

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AI JPM (STR) Provide addresses for Vautrin 10 June 2001
AI JH (ACRI) Send invitation to kickoff user working group meeting to DDE/RTM along with a copy of the workpackages 10 June 2001
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Annexes:
WP descriptions
CNRS-GA Budget