



**TRAMA**  
TRaining in Motion Analysis

**TRAMA**  
TRaining in Motion Analysis

**Second year closing meeting**

TRAMA Network Project

**5th – 6th March 2009**  
Mexico city

Second year closing meeting,  
Mexico City, March 5th 2009

**Thursday, 5th March 2009**

**Centro de Rehabilitación Infantil TELETON CRIT - Mexico City**

9.00 – 9.30 *Arthuro Pichardo (Teleton CRIT, Mexico City)*  
**Welcome to the second year closing meeting of TRAMA Project**

9.30 - 10.00 *Manuela Galli (Bioeng. Dept., Politecnico di Milano)*  
**Presentation of the TRAMA Project**

10.00 – 10.30 *Pablo Rogelio Hernandez (CINVESTAV, Mexico City)*  
**The activities of Centro de Investigación y de Estudios Avanzados del IPN CINVESTAV (Mexico City) in TRAMA Project**

10.30 – 11.00 *Arthuro Pichardo (Teleton CRIT, Mexico City)*  
**The activities of Centro de Rehabilitación Infantil TELETON CRIT (Mexico City) in TRAMA Project**

11.00 – 11.30 **Coffee Break**

11.30 – 13.00 *All Partners of TRAMA Project*  
**- Results of the second year of TRAMA Project**  
**- Organisation of the third year of TRAMA Project (Part A)**

13.00 – 14.00 **Lunch**

14.00 – 15.00 *All Partners of TRAMA Project*  
**Organisation of the third year of TRAMA Project (Part B)**

15.00 **Visit to the Centro de Rehabilitacion Infantil Teleton CRIT (Mexico City) and to the Gait Lab**

**Friday, 6th March 2009**

**Centro de Investigación y de Estudios Avanzados del IPN - CINVESTAV Mexico City**

9.30 - 10.00 *Manuela Galli (Bioeng. Dept., Politecnico di Milano)*  
**Presentation of the TRAMA project to authorities of CINVESTAV (Mexico City)**

10.15 **Visit to the Motion Analysis Lab, Section of Bioelectronics, Electrical Engineering Department, CINVESTAV (Mexico City)**

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Mexico City, March 5th 2009

**THE TRAMA PROJECT PRESENTATION**



**TRAMA**  
TRaining in Motion Analysis

Manuela Galli – Marcello Crivellini

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Mexico City, March 5th 2009


**The project was born from.....**



**The Posture and Movement Analysis Lab "Luigi Divieti", Bioeng Dept, Politecnico of Milan**

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**The idea: to establish a network within different partner of EU and LA countries working on the field of movement analysis.**



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**The history: the Gait Analysis Lab "Luigi Divieti"**

The activity of the Gait Lab started in 1992 with only 2 tv camera (ELITE, BTS). After that in 1994 Bioeng. Dept born and a big Gait Lab ( 6 tv camera, 1 force platform, 1 emg) was installed.

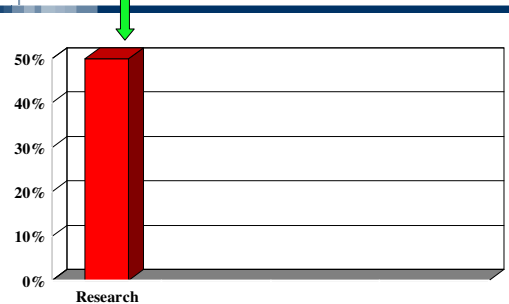
**The activity of the Lab strongly related to the USA experience**

↓

Organization of the activity of the "Luigi Divieti "Gait lab according to USA organization (Protocols, clinical use of the data ,.....)

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**Organization of our Gait Lab**



Research

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### Research

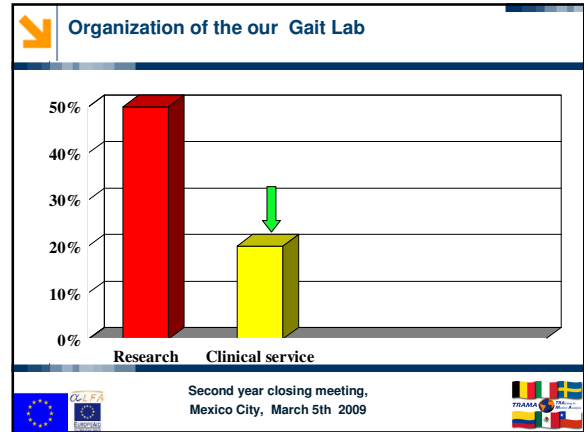
Quantification of pathological functional limitation pre and post rehabilitative treatments (Botulinum Toxin, surgery, orthosis, Baclofen, ...)

Development of experimental set-up "ad hoc" for different pathologies (Cerebral Palsy, Down Syndrome, Parkinson's disease, ataxia, obesity, ...)

Ergonomic and industrial applications

Sport biomechanics

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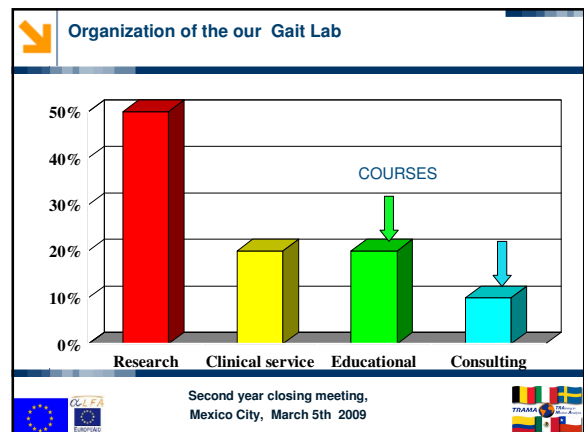


### Clinical service

Research and motion analysis tests for hospitals that they haven't yet a Motion Analysis Lab.


ISTITUTO "HUMANITAS" Rozzano (Mi)  
 ISTITUTO NEUROLOGICO "C.BESTA", Milano  
 ISTITUTO NEUROLOGICO "C.MONDINO", Pavia  
 ISTITUTO TUMORI, Milano  
 OSPEDALE DEI BAMBINI "BUZZI", Milano

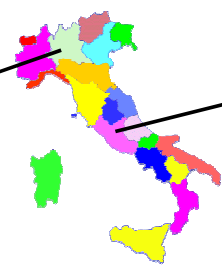
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**Consulting activity for new gait lab in Italy**

Children hospital  
Milan






Children hospital  
Rome



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**More and more**



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University

Industry

Official agreement for protocol development, clinical training,  
beta tester, technical support to new lab, courses and  
workshop on Gait Analysis in all the world

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**International workshop, new gait lab start up and clinical training**

- CINA: NANCHINO AND PECHINO
- TUNISIE: TUNISI
- ESTONIA: TARTU
- KOREA: DAJEON
- CILE: SANTIAGO
- ARGENTINA: BUENOSAIRE
- MESSICO: MEXICO CITY, GUADALAJARA, MONTERREY
- EL SALVADOR: SAN SALVADOR
- TURKEY: IZMIR, INSTAMBUL
- RUSSIA: MOSCOW
- PUERTO RICO

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### Consulting activity and training

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### Starting from this background ....

Why not use this experience for an Alfa program???

TRAIning + Motion Analysis

TRAMA

TRAIning in Motion Analysis

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### Partners

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### The project

The Project TRAMA Network was born with the aim of training researchers in the field of quantitative analysis of movement creating a Network among all the Institutions involved in the Project.

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TRAMA Project is one of the project of Programme αLFA (America Latina – Formacion Academica), which is a programme of co-operation between higher education institution of the European Union and Latin America

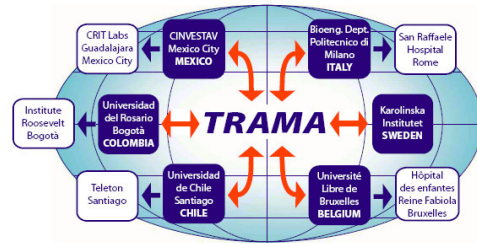
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## Aims of the project

- Training about the use of the equipment usually present in a Motion Analysis Lab, about the use of new experimental set-ups for movement analysis and about the development of new methodologies;
- Training via web and in practical session in the Labs, about the evaluation of the data acquired in motion analysis Labs and their clinical meaning;
- Network realization for a continue teaching assistance within different Institutions involved in the Project.

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## Partecipants to TRAMA project



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## Partners

- Dipartimento di Bioingegneria - Politecnico di Milano - ITALY - [www.movlab.it](http://www.movlab.it) - [manuela.galli@polimi.it](mailto:manuela.galli@polimi.it)
- Karolinska Institutet - SWEDEN - [www.ki.se](http://www.ki.se) - [Helga.Hirschfeld@ki.se](mailto:Helga.Hirschfeld@ki.se)
- Université Libre de Bruxelles - BELGIUM - [www.ulb.ac.be](http://www.ulb.ac.be) - [gcheron@ulb.ac.be](mailto:gcheron@ulb.ac.be)
- Universidad de Chile - Santiago - CHILE - [www.med.uchile.cl](http://www.med.uchile.cl) - [cpaolinell@redclinicauchile.cl](mailto:cpaolinell@redclinicauchile.cl)
- Universidad del Rosario - Bogotá - COLUMBIA - [www.urosario.edu.co](http://www.urosario.edu.co) - [Ivanuribe@yahoo.com](mailto:Ivanuribe@yahoo.com)
- CINVESTAV - Mexico City - MEXICO - [www.cinvestav.mx](http://www.cinvestav.mx) - [parohero@cinvestav.mx](mailto:parohero@cinvestav.mx)

**FULL PARTNERS or UNIVERSITIES**  
*Role in the project: teaching activity and  
coordination of the Grant - Holders*

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## Partners

- San Raffaele Hospital - Roma - ITALY - [www.sanraffaele.it](http://www.sanraffaele.it) - [giorgio.albertini@it](mailto:giorgio.albertini@it)
- Hôpital des enfants Reine Fabiola - Bruxelles - BELGIUM - [bernard.dan@ulb.ac.be](mailto:bernard.dan@ulb.ac.be)
- Teleton Santiago - CHILE - [www.teleton.cl](http://www.teleton.cl) - [slillo@teleton.cl](mailto:slillo@teleton.cl)
- Institute Roosevelt - Bogotá - COLUMBIA - [www.instituto-roosevelt.org.co](http://www.instituto-roosevelt.org.co) - [Ivanuribe@yahoo.com](mailto:Ivanuribe@yahoo.com)
- CRIT Labs - Guadalajara - Mexico City - MEXICO - [www.teleton.org.mx](http://www.teleton.org.mx) - [pichardo@teleton.org.mx](mailto:pichardo@teleton.org.mx)

**ASSOCIATE PARTNERS or CLINICAL CENTRES**  
*Role in the project: teaching activity and disposal of their  
motion analysis for practical experiences*

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**Grant holders**

**SELECTION CRITERIA**

- ☒ People already involved in a FULL or ASSOCIATE partner.
- ☒ With an experience in the field of rehabilitation or with a technical education
- ☒ i.e: medical doctors, physiotherapists, engineer,.....

↓

They will become "experts" in the field of Motion analysis

**Mainly for Latin America**

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**Latin American Countries**

9 grant holders  
 3 from Mexico (+1)  
 3 from Chile (+2)  
 3 from Colombia (+2)

**European Countries**

3 grant holders  
 1 from Italy  
 1 from Belgium  
 1 from Sweden

**17 grant holders**

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**The role of grant holders**

- ☒ To learn during courses and during practical session in Labs
- ☒ To transfer all the information learned to the movement analysis group (if exist)

Grant holder

↓

Staff of the lab

*The grant holder are requested to share with other people of the lab all the info in order to transfer the knowledge at the gait lab. Besides this if one grant holder exits from the project, for any reasons it will be easier to find a substitute.*

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**The final report**

**Final thesis about a defined argument:  
 Definition of a specific protocols for the evaluation of functional limitation related to a specific pathology**

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### Main Events

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    graph LR
      A[First year] --> B[Courses: to improve a common background on motion analysis]
      C[Second year] --> D[Practical sessions in EU Lab and GH thesis definition]
      E[Third year] --> F[Realization of GH thesis and LA practical sessions]
  
```

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### Conclusions

- Great satisfaction for these two years of work
- A lot of scientific agreement within different partners, in order to continue the collaboration after the closure of TRAMA project
- TRAMA...not only TRAMA..... The idea is to continue with the collaboration with other Alfa and not Alfa projects.

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### Participant for each country

MEXICO FULL partner: Centro de Investigación y de Estudios Avanzados del IPN - CINVESTAV, Mexico city

Prof . Dr Hernandez Rodriguez Pablo-Rogelio

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### Clinical partner : CRIT Mexico city and CRIT Guadalajara

Dr Arturo Pichardo

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**GRANT HOLDERS MEXICO : Medical doctors**



Dr Juan Carlos Perez Moreno  
CRIT Mexico City



Dr.a Ariana Cedillo  
CRIT Guadalajara

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**GRANT HOLDERS MEXICO : Engineers**



Ing Eladio Cardiel  
Cinvestav Mexico City



Ing Demetrio Villanueva  
CRIT Mexico City

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**TRAMA** TRaining in Motion Analysis



- THE FIRST TWO YEARS OF TRAMA PROJECT
- THE ORGANIZATION OF THE THIRD YEAR

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Manuela Galli - Marcello Crivellini

**Main Events**

First year

→

Courses: to improve a common background on motion analysis

Second year

→

Practical sessions in EU Lab and GH thesis definition

Third year

→

Realization of GH thesis and LA practical sessions

Second year closing meeting,  
Mexico City, March 5th 2009

### First year

EVENT	PLACE	TIME (DURATION)	PARTICIPANTS	
			TEACHER	GRANT HOLDER
FIRST YEAR				
First meeting	Milan	11 may 2007	7LA+5EU	
Course: Basics in MA	Milan	10th - 12th September 2007 (3 days)	SEU	3EU+9LA
Practical session	Milan	13th - 22nd September 2007 (10 days)		9LA
Course:MA and clinics	Bruxelles	14th - 17th January 2007 (4 days)	4EU+7LA	3EU+9LA
Practical session	Bruxelles	18th - 28th January 2007 (11 days)		9LA
MAL set up and running	Chile	10th - 14th March 2008 (5 days)	SEU	3EU+9LA
Second meeting	Via iweb	March 2008	3EU+3LA	

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### First year

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			TEACHER	GRANT HOLDER
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Second meeting	Via iweb	March 2008	3EU+3LA	

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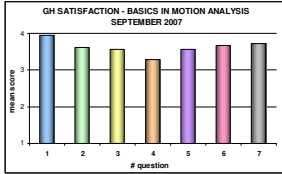
## First year

### First Course "Basics in Motion Analysis" and Practical Session



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## Participant satisfaction questionnaire of the first course



# question	Mean Score
1	3.8
2	3.5
3	3.5
4	3.2
5	3.5
6	3.8
7	3.8

1. Course organization (program, staff, travel ...)
2. Contents and arguments of the Course
3. Contents and arguments of the Practical Session
4. Arguments of lessons adequate for your knowledge level.
5. Helpfulness of Course and Practical Session.
- 6 Facilities: Course room and the equipments.
7. General course satisfaction

The level of satisfaction was measure for each question from 1 to 4 (1: poor; 2: adequate; 3: good; 4: excellent).

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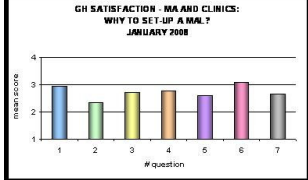
## First year

### Second Course "Motion Analysis and clinics: why to set-up a MAL?" and Practical Session



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## Participant satisfaction questionnaire of the second course in Bruxelles



# question	Mean Score
1	3.0
2	2.5
3	2.8
4	2.8
5	2.8
6	3.2
7	2.8

1. Course organization (program, staff, travel ...)
2. Contents and arguments of the Course
3. Contents and arguments of the Practical Session
4. Arguments of lessons adequate for your knowledge level.
5. Helpfulness of Course and Practical Session.
- 6 Facilities: Course room and the equipments.
7. General course satisfaction

The level of satisfaction was measure for each question from 1 to 4 (1: poor; 2: adequate; 3: good; 4: excellent).

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**First year**

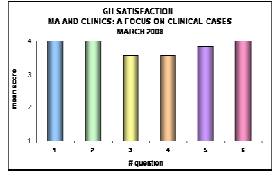
**Third Course "Motion Analysis and Clinics: a focus on clinical cases"**



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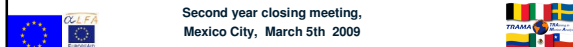
**Participant satisfaction questionnaire of the second course in Santiago**



The level of satisfaction was measure for each question from 1 to 4 (1: poor; 2: adequate; 3: good; 4: excellent).

1. Course organization (program, staff, travel ...)
2. Contents and arguments of the Course
3. Contents and arguments of the Practical Session
4. Arguments of lessons adequate for your knowledge level.
5. Helpfulness of Course and Practical Session.
6. Facilities: Course room and the equipments.
7. General course satisfaction

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**First year**

Video conference for the closure the first year and organization of the second year.



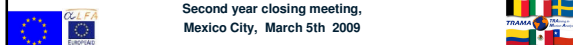
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**Other actions related to the project**

- a) Visit to EU Community and organization of the Second Course "Motion analysis and clinics: why to setup a MAL?"
- b) Visit to IRCCS "San Raffaele Pisana" Tosinvest Sanità, Roma (Italy)
- c) Web site realization ([www.biomed.polimi.it/trama](http://www.biomed.polimi.it/trama))
- d) Audit
- e) Others .....( e-mails, posters, CD,...)

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## Second year:official program

EVENT	PLACE	TIME (DURATION)	PARTICIPANTS	
			TEACHER	GRANT HOLDER
SECOND YEAR				
MALS management and organization	Milan	May 2008 (3 days)	1EU	9LA
Practical sessions in EU MALS	Milan, Bruxelles, Stockholm	May, June, July 2008 (1 month at each of 3 EU institution)	3EU+9LA	
Practical sessions in each own MAL	Own MAL	September 2008- February (2009) (6 months)	3EU+9LA	
Results evaluation	Mexico City Bogotà Clé	March 2009 (3 days)	4EU	9LA
Third meeting	Via web	April 2009	3EU+3LA	

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## Organization of the second year March 2008- march 2009

- Course in Rome 21-22- 23 May 2008 Place: IRCCS San Raffaele Child, Adult, Aging Developmental Center – Director Prof Giorgio Albertini




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## Thanks to.....



**TRAMA**  
TRaining in Motion Analysis  
"The role of Motion Analysis in rehabilitation"  
Seminars on 2nd year of TRAMA Network Project  
21st -23rd May 2008





Conference Room  
IRCCS "SAN RAFFAELE PISANA" - Tosinvest Sanità  
Via Della Pisana 235  
ROMA (ITALY)

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## Seminar organization

- A teaching activity;
- Practical activity of GH.





body interactions  
Perry 1982

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**Wednesday, 21st May 2008**

9.00 - 9.30 <b>Welcome</b> Salvatore Tubino, Giorgio Albertini, Alessandra Cosselli, Massimo Pini The IRCCS "San Raffaele Pisana" presentation: The scientific collaboration between Toorment Sarinli and Biomeg Dept of Polytechnic of Milan.	13.00 - 14.00 <b>Lunch</b>
9.30 - 10.00 <b>Abstracts talk, multidisciplinary</b> Description of the activities, aims and organization.	14.00 - 14.45 Giorgio Albertini, Alessandra Cosselli, Massimo Pini <b>The use of Gait Analysis in Cerebral Palsy: Evaluation of Brackmann Train treatment and Bio-Step group treatment.</b>
10.00 - 10.45 <b>Abstracts talk, multidisciplinary</b> The use of Movement and Gait Analysis in clinical protocols, difficulties and errors related to this patient condition with particular reference to Cerebral Palsy.	14.45 - 15.15 <b>Work in group and discussion about the argument of the presentation.</b>
10.45 - 11.15 <b>Abstracts talk, multidisciplinary</b> The use of Movement and Gait Analysis in clinical protocols, difficulties and errors related to this patient condition with particular reference to Cerebral Palsy.	15.15 - 15.30 <b>Break</b>
11.15 - 11.30 <b>Break</b>	15.30 - 16.15 Giorgio Albertini, Alessandra Cosselli, Massimo Pini <b>The use of movement analysis in the evaluation of orthotic and rehabilitative treatment in children with Cerebral Palsy.</b>
11.30 - 12.30 <b>Practical session in the lab: acquisition of data, related to main problems occurring during acquisition of patients with Cerebral Palsy and principal corrections. Data analysis.</b>	16.15 - 17.00 Paolo Cioni, Giuseppe Tamburini, Giuseppe Donzelli <b>The Overall Observation in children with Cerebral Palsy: The evaluation of the effects of Overall Observation using movement analysis: previous studies and results.</b>
12.30 - 13.00 <b>Discussion.</b>	17.15 - 18.00 <b>Work in group and discussion about the argument of the two previous presentations.</b>

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**TRAMA**  
7th Annual Meeting Analysis  
"The role of Motion Analysis in Rehabilitation"  
Lectures and practical sessions  
23rd - 25th May 2008  
IRCCS "San Raffaele Pisana" - Milan, Italy

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**Trama project SWOT analyses**

**SWOT stands for:**

Strengths (S),  
Weaknesses (W),  
Opportunities (O) and  
Threats (T)

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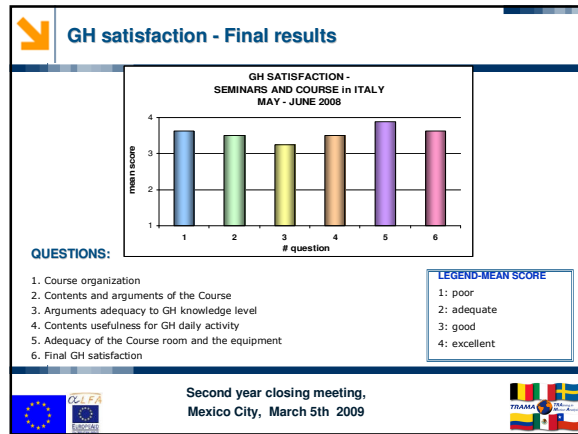
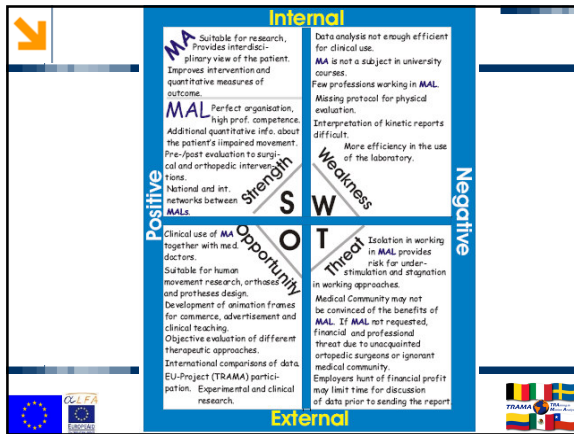
**Strengths:**  
What do we do exceptionally well?  
What advantages do we have?  
What valuable assets and resources do we have?  
What do members/customers identify as our strengths?

**Weaknesses**  
What could we do better?  
What are we criticized for or receive complaints about?  
Where are we vulnerable?

**Opportunities**  
What opportunities do we know about, but have not addressed?  
Are there emerging trends on which we can capitalize?

**Threats**  
Are weaknesses likely to make us critically vulnerable?  
What external roadblocks exist that block our progress?  
Is there significant change coming in our members' sector?  
Are economic conditions affecting our financial viability?

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### Second year

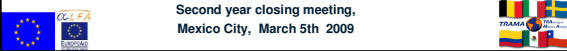

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## GHs PRACTICAL STAYING IN EU

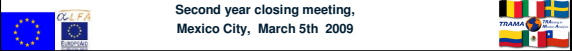

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## MEXICAN GRANT HOLDERS IN EU

NAME/SURNAME	PERIOD	PLACE
ARIADNA CEDILLO	26 MAY-13 JUNE 2008	ITALY
	3 FEBRUARY-12 FEBRUARY 2009	SWEDEN
JUAN CARLOS PEREZ MORENO	26 MAY-13 JUNE 2008	ITALY
ELADIO CARDIEL	26 MAY-13 JUNE 2008	ITALY
DEMETRIO VILLANUEVA	9 FEBRUARY-20 FEBRUARY 2009	ITALY

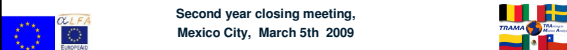

Second year closing meeting,  
Mexico City, March 5th 2009

## COLOMBIAN GRANT HOLDERS IN EU

NAME/SURNAME	PERIOD	PLACE
JUAN ALBERTO CASTILLO	26 MAY-7 JUNE 2008	ITALY
	17 JANUARY-15 FEBRUARY 2009	SWEDEN
RENE ALEJANDRO OROZCO ACOSTA	26 MAY-7 JUNE 2008	ITALY
	17 JANUARY-14 MARCH 2009	SWEDEN
LUIS RUEDA FONSECA	26 MAY-7 JUNE 2008	ITALY
IVAN URIBE	1 MARCH-15 MARCH 2009	SWEDEN

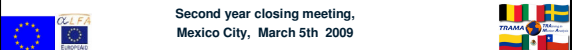
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## CHILEAN GRANT HOLDERS IN EU

NAME/SURNAME	PERIOD	PLACE
CLAUDIO ROZBACZYLO	26 MAY-13 JUNE 2008	ITALY
	17 JANUARY-31 JANURAY 2009	SWEDEN
CARLOS ALVAREZ	20 SEPTEMBER - 24 OCTOBER 2008	ITALY
	17 JANUARY-31 JANURAY 2009	SWEDEN
MONICA MORANTE	17 JANUARY-31 JANURAY 2009	SWEDEN
LUIS BRICENO	12 JANUARY-30 JANUARY 2009	ITALY

Second year closing meeting,  
Mexico City, March 5th 2009





## Second year

EVENT	PLACE	TIME (DURATION)	PARTICIPANTS	
			TEACHER	GRANT HOLDER
<b>SECOND YEAR</b>				
MALS management and organization	Milan	May 2008 (3 days)	IEU	SLA
Practical sessions in EU MALS	Milan, Bruxelles, Stockholm	May, June, July 2008 (1 month at each of 3 EU institution)		3EU+9LA
Practical sessions in each own MAL	Own MAL	September 2008- February (2009) (6 months)		3EU+9LA
Results evaluation	Mexico City Bogotà Chile	March 2009 (3 days)	4EU	9LA
Third meeting	Via web	April 2009	3EU+3LA	

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## Discussion of arguments of GH thesis : Chilean GH

Prof : Manuela Galli and Veronica Cimolin in Santiago




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## Arguments of GH thesis : Chilean Group




**Luis Briceno**

**METODOLOGY:**

- \*2 groups of subjects were identified:
  - Group 1: 20 MMC patients L3 to S1 level
  - Group 2: 10 normal children
- \*Ages: 6 to 13 years old
- \*All patients will be able to walk independently without orthosis or assistive devices

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## Arguments of GH thesis : Chilean Group



**Monica Morante and Mariana Haro**

**OBJECTIVE**

- To create an instrument of evaluation with kinematic parameters based in the information obtain in the gait lab of MMC patients and a group of normal children.

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**Arguments of GH thesis : Chilean Group**




**CARLOS ALVAREZ**  
**Protocols**  
**for posture evaluation in**  
**normal and pathological**  
**subjects**

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 Mexico City, March 5th 2009



**Arguments of GH thesis : Chilean Group**

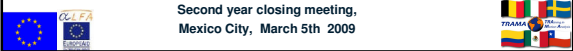


**Model for measure the kinematic**  
**behavior of the "Stiff knee"**

**Kigo, Claudio Rozbaczylo Fuster**  
**Mail: crozbaczylo@gmail.com**  
**Diciembre 2008**

**CLAUDIO ROZBACZYLO**

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 Mexico City, March 5th 2009



**Arguments of GH thesis: Mexican Group**

Prof : Helga Hirschfeld in Mexico city




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**Arguments of GH thesis : Mexican Group**



**Electromyographic analysis from patterns**  
**of activity in gastrocnemius muscle of**  
**hemiparetic patients at ages before and**  
**after 7 years old**

**Juan Carlos Pérez Moreno**  
**CRIT Estado de México**

**Juan Carlos Perez Moreno**

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 Mexico City, March 5th 2009



**Arguments of GH thesis : Mexican Group**



**TRAMA Project**

Movement analysis in upper limb.  
Standardization in Mexican population

**Ariana Cedillo**

Centro de Rehabilitación Infantil Teletón Occidente

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Mexico City, March 5th 2009



**Arguments of GH thesis : Mexican Group**




Determination of a mathematical indicator for human stability based on control criteria

(Falling Syndrome)

TRAMA PROJECT  
Eladio Cardiel  
Guest Professor  
Pablo Rogelio Hernández  
Full Partner  
CIVESTAV MEXICO

**Eladio Cardiel**

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Mexico City, March 5th 2009



**Arguments of GH thesis :Colombian Group**

Prof : Carlo Frigo in Bogotá




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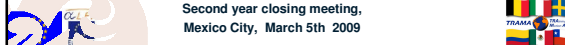


**Arguments of GH thesis : Colombian Group**




**A Comparison of two Methods of Movement Analysis of the Trunk during the Lifting of Loads**  
Castillo, J. Orozco, A. Uribe, I.  
Colombia

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Mexico City, March 5th 2009




A Comparison of two Methods of Movement Analysis of the Trunk during the Lifting of Loads

**Objective:**  
To establish index that allows the analysis of kinematics variables of the trunk during the load lifting task.

**Specifics:**  
To study a work situation in a natural environment and in laboratory conditions.  
To employ direct methods of registering the movement of the trunk during the load lifting.  
To identify equivalences of analysis for both methods of registration.  
To verify the validity of the information registered.

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Mexico City, March 5th 2009




A Comparison of two Methods of Movement Analysis of the Trunk during the Lifting of Loads

**Subjects:**  
Young healthy individuals without any prior histories in muscle skeletal injuries, who have experience in load movement (more than two years), and who have an active work life; subjects must be at work at the time of the experiments.

**B. Procedures**  
The experiment will be developed in two settings (scenarios):

1. Real work setting activity - SR1
2. Laboratory simulation activity - SL1
3. Principal anthropometric data and measurements are registered
4. General health evaluation is given.

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Mexico City, March 5th 2009



A Comparison of two Methods of Movement Analysis of the Trunk during the Lifting of Loads

**Analyzed Variables:**


**a. Activity analysis.**  
Description of the task  
Codification of the actions  
Description of the posture  
Identification of the motor gesture during load lifting

**b. Kinematics Variables**  
-Displacement, velocity, acceleration of the trunk (flexion-extension) in sagittal plane (C7, Sacrum, Shoulder, Hand.)  
-Rotation of the trunk

**c. Kinetic variables**  
-Exerted force  
-Obtaining the joint moments

**d. Electromyography – symmetric record of:**  
- Rectus Abdominus  
- Spine erectors  
- Hamstrings


Second year closing meeting,  
Mexico City, March 5th 2009



**Third year**

EVENT	PLACE	TIME (DURATION)	PARTICIPANTS	
			TEACHER	GRANT HOLDER
<b>THIRD YEAR</b>				
Final practical activity in LI MILS	Mexico City Bogota Chile	June 2009		3EU
MIL business plan simulation	Milan Mexico City	September/October 2009 (7 days)	1EU	3EU+3LA
Final meeting	Bogota	April 2010 (4 days)	7LA+4EU	3EU+3LA

Second year closing meeting,  
Mexico City, March 5th 2009



### Third year

- Definition of GH thesis not yet defined;
- Definition of LA stay of EU GHs (15 days)
- Definition of the results evaluation in Italy for EU GH and in Mexico city for LA GHs;
- Final closing meeting organization

Second year closing meeting,  
Mexico City, March 5th 2009

### Definition of GH thesis not yet defined

- Thesis definition for Demetrio Villaneuva

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Mexico City, March 5th 2009

### Third year

- Definition of GH thesis not yet defined;
- Definition of LA stay of EU GHs (15 days)
- Definition of the results evaluation in Italy for EU GH and in Mexico city for LA GHs;
- Final closing meeting organization

Second year closing meeting,  
Mexico City, March 5th 2009

### Definition of LA stay of EU GHs (15 days)

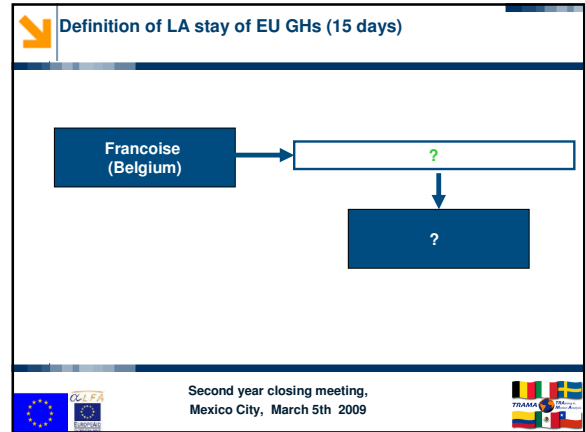
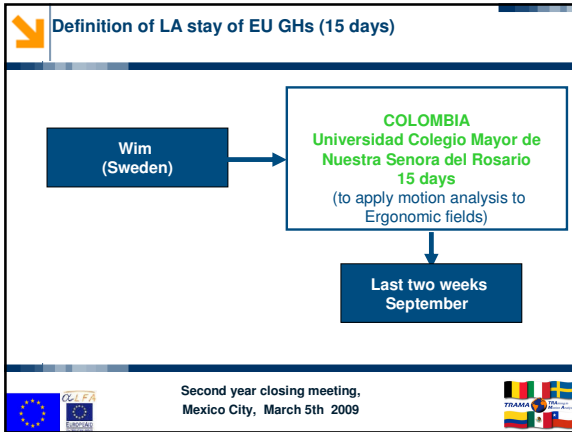
CHIARA (IT) →

CRIT Guadalajara 10 days  
(to apply new Smart protocols to clinical environment)  
CINVESTAV 5 days  
(to apply Smart Analyzer software To data from different motion capture Technologies)

↓

Last two weeks of July

Second year closing meeting,  
Mexico City, March 5th 2009



- Third year**
- Definition of GH thesis not yet defined;
  - Definition of LA stay of EU GHs (15 days)
  - Definition of the results evaluation in Italy for EU GH and in Mexico city for LA GHs;
  - Final closing meeting organization
- Second year closing meeting,  
Mexico City, March 5th 2009

**Meeting with the EU GHs**

MILAN- Politecnico  
September  
Meeting with EU GH

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Mexico City, March 5th 2009

Meeting with the LA GHs

Mexico City- Cinvestav  
December- January  
Meeting with LA GHs

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Mexico City, March 5th 2009

Third year

- Definition of GH thesis not yet defined;
- Definition of LA stay of EU GHs (15 days)
- Definition of the results evaluation in Italy for EU GH and in Mexico city for LA GHs;

Final closing meeting organization

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Mexico City, March 5th 2009

Bogotá or Rome??

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Mexico City, March 5th 2009

The opinions of the partners: comments

The coordinator of TRAMA project:

Great satisfaction for a lot of reasons:

- The project is reaching really the aim of the project
- A good network for future collaborations

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Mexico City, March 5th 2009

**The opinions of the partners: ITALY**

The clinical partner



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Mexico City, March 5th 2009



**The opinions of the partners: Sweden**

Comments about the last two years.

*The aim of the training was to develop quantitative analysis of posture and motion - however the training has been more focused on gait analysis - I had the feeling that we had a lot of focus on how to handle the system ( mostly ELGait) but too little about to understand the analysis from theoretical and problem solving approach ( Ariadne in my lab made it very clear for me) Example. We had a setup with the Colombia-group for a load lifting task with only few markers on trunk and hand and box. Ariadne could not understand why data computing after tracking in ELGait not was possible) I noticed Chile and Ariadne were working with Francesco's upper extremity protocol but not really understanding the different functions and steps. My concern is that we missed teaching in quantitative movement analysis with focus on concepts and analysis (why how what for etc) and were more focused on procedure. When writing this, I actually do not know how much of this I learned during there practical periods.*



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Mexico City, March 5th 2009




**The opinions of the partners: Sweden**

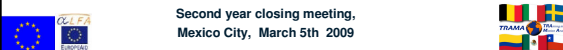
*However, I hope that towards the end of the 3rd year the TRAMA project has given the tools and opportunity to the grant holder to look for their own interest inside the frame of motion analysis. I think it will be important to us to know how the Latin American institutions are using and spreading the knowledge acquired during the TRAMA training among its own community.*

*About the close-up meeting. For me it is o.k. in Rome. As you know I prefer not traveling so many hours. Optional, why not Stockholm. We had a meeting in Bruessel, Milano, Rome but not in Stockholm.*

*However, Rome is fine for me*



Second year closing meeting,  
Mexico City, March 5th 2009



**The opinions of the partners: Belgium**




Second year closing meeting,  
Mexico City, March 5th 2009





**The opinions of the partners: Colombia**



Second year closing meeting,  
Mexico City, March 5th 2009



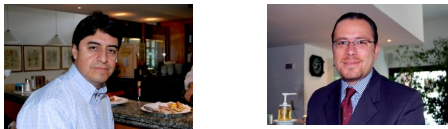
**The opinions of the partners: Chile**



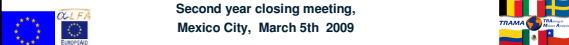
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Mexico City, March 5th 2009



**The opinions of the partners: Mexico**



Second year closing meeting,  
Mexico City, March 5th 2009




**Comments**

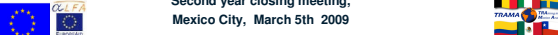
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Mexico City, March 5th 2009



 **Concerning the web**

- Check the website at [biomed.polimi.it/trama](http://biomed.polimi.it/trama)  
[www.biomed.polimi.it/trama](http://www.biomed.polimi.it/trama)
- Any suggestions are welcome
- Please provide photo, materials and other info for the web site

 Second year closing meeting,  
Mexico City, March 5th 2009



*GOOD WORK!!!*

 Second year closing meeting,  
Mexico City, March 5th 2009