



IST-004527 ARTIST2: Embedded Systems Design

Activity Progress Report for Year 1

Gender Action Plan

Task Force Leader:

Pedro Albertos (Polytechnic University Valencia)



Table of Contents

1.	Intro	duction	3
1	1.1	Activity Leader	3
1	1.2	Policy Objective	3
1	1.3	Gender Task Force	3
2.	Ove	rview of the Activity	4
2	2.1	General activities	4
2	2.2	Starting date, and expected ending date	4
2	2.3	Baseline	4
2	2.4	Technical Description	5
3.	Activ	vity Progress Report	6
3	3.1	Work achieved in the first 12 months	6
3	3.2	Data from the 1 st year general meeting	8
3	3.3	SKILLS AND COMPETENCES	9
3	3.4	Recommendations	16
3	3.5	Difficulties Encountered	19
4.	Futu	re plans	20
2	1.1	Get feedback	20
4	1.2	Exploit the results	20
2	1.3	Second year activity	20



1. Introduction

1.1 Activity Leader

Task Force Leader: Pedro Albertos (Polytechnic University of Valencia)

1.2 Policy Objective

ARTIST2's Gender Action Plan includes three elements (6.6 Gender Action Plan):

1) The NoE will apply a proactive policy to reinforce the presence of women in the area. In particular, whenever it interacts directly with individuals, it will favour a woman over a man when they have equal qualifications. This will be the case for staff mobility, Summer Schools, and scholarships. Furthermore, the NoE will take actions to ensure that, when hiring students or professionals, for equal qualifications, women will be preferred. The same principle will be applied when assigning responsibilities.

Yearly headcounts will be brought to the attention of the Strategic Management Board and of the Executive Management Board, with recommendations to eventually improve the situation.

- 2) A Gender Issues Task Force will be formed from the beginning, with representatives of the NoE clusters, and will prepare a detailed plan for four years. This plan will pay special attention to the gender issues.
- 3) A series of surveys and analyses will be undertaken by the Task Force, as well as research on the gendered dimension of embedded systems design. This work will study the differences among men and women in terms of needs, aspirations, attitudes, practice of study, etc. Original web-based tools will be produced to conduct these surveys, and will eventually be revised according to new initiatives inside the network. They will be based on existing tools available on the Web. Yearly results will be produced to be used as feedback by the NoE in its evolution, and an ongoing analysis will bring more light on issues, formerly existing or emerging. The yearly results will be published in the Management report.

1.3 Gender Task Force

A Task Force to define and implement the GAP, as defined in the NoE application, was created at the Kick-off meeting, Grenoble, October 2004. It was composed by:

Pedro Albertos (Polytechnic University of Valencia, Spain) (Chair)

Valérie Bertin (STMicroelectronics - France)

Ivica Crnkovic (Mälardalen University, Sweden)

Lucia Lo Bello (University of Catania, Italy)



2. Overview of the Activity

2.1 General activities

- 1. Prepare a number of questionnaires to collect data from the ARTIST2 partners
- 2. Elaborate a set of indices about Gender Equal Opportunities (GEO)
- 3. Track the evolution of these figures in the NoE life time
- 4. Generate a webpage in ARTIST2 for:
 - Gender issues (GI) information
 - GI suggestions
 - On-line questionnaires reply

The basic material used to get this information will come from the previous experience of the TF members in similar activities.

More detailed, this information will consist on:

- The gender stereotyped consideration of Masculine and/or Feminine involved activities in embedded systems design.
- The percentage of women/men in members of the research teams
- The percentage of women/men in new hired people (and comment if any special action has been taken for ensuring GEO)
- The percentage of women/men in people participating in staff mobility: Summer Schools, and scholarships.

2.2 Starting date, and expected ending date

During the first year, the TF will prepare the questionnaires and define the data analysis.

In order to make easy the data collection and interact with the ARTIST2 members, the first data gathering will be carried out at the time of the First year general meeting.

The data will be processed and a preliminary report will be issued.

The procedure will be fine-tuned in the following years

The information and results will be available in the GAP website (part of the ARTIST2 website).

2.3 Baseline

Europe is leading the application of the GEO principle. How this policy could be applied in the IST research area is not well known.

Data gathered from the NoE will contribute to the analysis of real situation and will suggest actions to be implemented during the network life.



Report on Gender Action Plan

Three main ideas are considered: the gender relevance in the ARTIST2 activities, the availability of women/men to carry out these activities and the actual percentage of women in this field.

2.4 Technical Description

Being a subject not in the core activities of the NoE, the Task Force will use documents and tools available elsewhere.

Thus, the first results should be carefully examined as far as the methodology is not specially prepared for this NoE, neither for the IST area.



3. Activity Progress Report

3.1 Work achieved in the first 12 months

a. Position Profile

The GAF TF members held and exchange ideas about the skills and competences required being a good researcher in the field. As a result, and based on similar analysis, the following abilities were considered as relevant:

- Ability to communicate
- Ability to impose the enforcement of orders, rules and objectives
- Ability to negotiate
- Adaptability
- Anticipation
- Assertiveness
- Assessment
- Autonomy
- · Capability for active listening
- · Capability for analysis
- Capability for execution
- Capability for reflection
- Capability for synthesis
- Constancy, perseverance, tenacity
- Coaching skills
- Creativity
- Decision-taking with assurance

- Efficient time management
- Flexibility
- Information search and analysis
- Initiative-taking
- Long-run thinking
- Organizing
- Planning
- Problem solving, analysis, diagnosis and contribution of solutions
- Rigorousness
- Self-control
- Set up goals and objectives
- Strategic reasoning
- Supervision
- Task-oriented
- Teamwork
- · Training skills

Based on previous studies made by experts (psychologists) a stereotype of gender is assigned to each skill of the list, having three possible options or labels: masculine, feminine or neutral.

The ARTIST2 members will be asked to weight the relevance of each one of these abilities in developing their research, without knowing the assigned stereotype.





This information will allow to characterize the gender bias, if any, in the Researcher Position.

b. Offer availability

In order to estimate the availability of women to become researchers in the ARTIST2 NoE, statistical information obtained from the Eurostat website (Females, Males, Total) about science and technology graduates at the European Union states was used. This information is rather imprecise and will be validate with national ratios, when available.

Moreover, the attractiveness of the researcher activity and the possible barriers for women to take this position is evaluated by means of a questionnaire, also taken from previous and similar studies. The ARTIST2 members will be asked to evaluate their perception of the Gender Equality (GE) in their own organization, by filling in the following questionnaire:

ORGANIZATIONAL CULTURE	0-10
The values and rules governing your organization are women-inclusive and stimulate GE.	
The networks and power groups are women-inclusive and stimulate GE.	
The style and orientation of the management creates a women-inclusive environment, stimulating GE.	
Women enjoy the same decision-taking power and freedom of action than their male counterparts.	
Your organization acknowledges the value and professional contribution of women in their jobs.	
The atmosphere and relationship between members of the team are positive for women and favourable to GE	
The attitudes and behaviour of the staff are respectful and do not stimulate situations of sexual harassment.	
The internal and external communication, the language and the images used within your organization are women-inclusive and stimulate GE.	
The facilities, working environment and services meet the different needs of the members of your organization, and stimulate GE.	
ORGANIZATIONAL POLICIES	
The recruitment system is equalitarian and oriented towards the search of GE.	
The assessment and promotion system is equalitarian and sensitive to the possible differences in the career development of women and men.	
The <i>policies of working hours, travel and transfers</i> promotes quality of life and conciliation between professional and private life equally for women and men.	
The wage policy is equalitarian and sensitive to the possible differences in the career development of women and men.	
The training policy stimulates women's participation and includes topics about GE.	
There are explicit <i>policies about Equality of Opportunities</i> (mentoring, flexible work, sensitization programmes, observatories, equality agents, services, etc)	
MOTIVATION	
Women able to be researcher have high professional goals.	
Professional women have motivation to be researcher.	
Women able to be researcher have clear professional interests, related to an established career plan.	
SATISFACTION	
Women able to be researcher are satisfied with the existing culture and policies.	



Report on Gender Action Plan

Women able to be researcher are satisfied with their career development.	
Women able to be researcher are satisfied with how their value and professional contribution are appreciated.	

c. Actual situation

In order to evaluate the actual information, all the Partners leaders will be asked to reply the following questions:

% women in	staff	PhD students
your research team		
new hired people		
Mobility		
Summer Schools		
Grants & scholarships		
Management		

The main concern was the "fuzzy" concepts of belonging to or being hired for a NoE.

d. Perception of gender stereotypes

Additionally, in order to evaluate the gender stereotyped position of the researchers, the following questionnaire was foreseen:

Do you realize differences among men and women in terms of work:

Women w.r.t Men (please, select one option)	>	=	<	?
Needs of recognition				
Aspirations in scaling powerful positions				
Attitudes in sharing information				
Practice of study to increase the knowledge				

3.2 Data from the 1st year general meeting

The data collected at the first year meeting are attached:



Position Profile

Value the competences in the range from ${\bf 0}$ to ${\bf 3}$, depending on its relevance/importance to be a RESEARCHER, in particular in this field.

0 = not concerning 2 = medium importance

1 = low importance 3 = high importance

	VALUATION
3.3 SKILLS AND COMPETENCES	(0-1-2-3)
Ability to communicate	3
Ability to impose the enforcement of orders, rules and objectives	2
Ability to negotiate	2
Adaptability	2
Anticipation	2
Assertiveness	2
Assessment	2
Autonomy	3
Capability for active listening	2
Capability for analysis	3
Capability for execution	3
Capability for reflection	3
Capability for synthesis	3
Constancy, perseverance, tenacity	2
Coaching skills	2
Creativity	3
Decision-taking with assurance	2
Efficient time management	3
Flexibility	2
Information search and analysis	3
Initiative-taking	3
Long-run thinking	3
Organizing	2
Planning	2
Problem solving, analysis, diagnosis and contribution of solutions	3
Rigorousness	2
Self-control	2
Set up goals and objectives	3
Strategic reasoning	2
Supervision	2
Task-oriented	2
Teamwork	2
Training skills	2

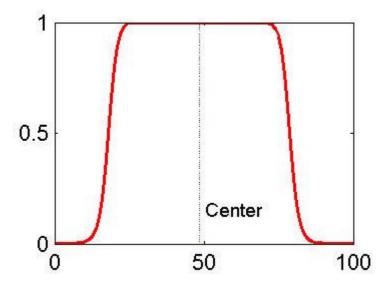


The results have been processed by means of specific software to produce a gender diversity profile for the position of a researcher, which is a distribution that depicts the proper percentages of women and men for the position being analysed. This distribution function has the name of Functional Diversity.

The Researcher position has the following distribution of stereotyped characteristics according to gender:

Masculine 21,31 % Feminine 18,03 % Neutral 60,66 %

Graphically, these percentages are reflected by the functional diversity:



depicting a well-balanced gender diversity profile. This study suggests, according to the answers to the questionnaires, an optimal distribution between 25% - 72% of the community of researchers being women, with the centred optimal distribution at a 49% of women.

Gender Barriers

ORGANIZATIONAL CULTURE	
The values and rules governing your organization are women-inclusive and stimulate GE.	7.83
The networks and power groups are women-inclusive and stimulate GE.	6.5
The style and orientation of the management creates a women-inclusive environment, stimulating GE.	6.92
Women enjoy the same decision-taking power and freedom of action than their male counterparts.	8.91
Your organization acknowledges the <i>value and professional contribution</i> of women in their	8.92



Report on Gender Action Plan

jobs.	
The atmosphere and relationship between members of the team are positive for women and favourable to GE	8.5
The attitudes and behaviour of the staff are respectful and do not stimulate situations of sexual harassment.	9.33
The internal and external communication, the language and the images used within your organization are women-inclusive and stimulate GE.	8.33
The facilities, working environment and services meet the different needs of the members of your organization, and stimulate GE.	8.1
ORGANIZATIONAL POLICIES	
The recruitment system is equalitarian and oriented towards the search of GE.	8.5
The assessment and promotion system is equalitarian and sensitive to the possible differences in the career development of women and men.	7.84
The policies of working hours, travel and transfers promote quality of life and conciliation between professional and private life equally for women and men.	8
The wage policy is equalitarian and sensitive to the possible differences in the career development of women and men.	8.26
The training policy stimulates women's participation and includes topics about GE.	8.08
There are explicit <i>policies about Equality of Opportunities</i> (mentoring, flexible work, sensitization programmes, observatories, equality agents, services, etc)	7.67
MOTIVATION	
Women able to be researcher have high professional goals.	8.42
Professional women have motivation to be researcher.	7.83
Women able to be researcher have clear <i>professional interests</i> , related to an <i>established career plan</i> .	7.59
SATISFACTION	
Women able to be researcher are satisfied with the existing culture and policies.	7
Women able to be researcher are satisfied with their career development.	7.17
Women able to be researcher are satisfied with how their value and professional contribution are appreciated.	7.33

The global indicators for gender barriers give the following numbers:

	Index Value	
Organizational Culture	8,1	
Organizational Policy	8,1	
Personal Conditioners	7,6	Global Index of gender barriers (EO) = 7.9

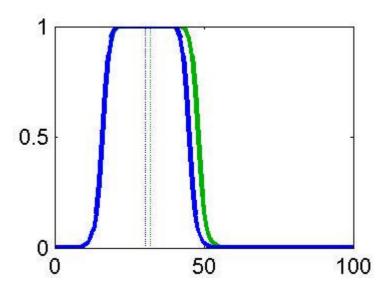


Offer availability

Statistical information obtained from the Eurostat website (Females, Males, Total) states that, approximately, 32% of the science and technology graduates at the European Union in year 2003 were women.

Taking into account this number, a further research is made in order to compare this global number with the percentages of graduates at a University of the European Union, for instance, the Polytechnic University of Valencia, in Spain. In the academic year 2002 / 2003, 35% of all the graduates at the University were women.

With this information, along with the numbers of the gender barriers, a rough study of availability of women researchers can be obtained, producing a profile of availability at the offer, called Offer Diversity:



The study of diversity at the offer yields an estimated availability of between 22% and 39% of women. The figure in green depicts the availability *before* applying the restriction due to the impact of the measured gender barriers, which gives an idea of how well the situation of gender barriers is, according to the perception of the experts that have answered the questionnaire.

Analysis of the current situation

A second questionnaire was answered, with information about the current percentage of women at the work team. The results are the following:



ARTIST2 Task Force on Gender Issues

First year evaluation

% women in	staff	PhD students
your research team	0, 0, 12, 13, 3, 0, 0, 12, 0, 10, 12, 0, 25, 0, 0, 20, 12, 0, 1, 0, 14.28	0, 10, 20, 17, 10, 0, 0, 14, 40, 3, 10, 33, 0, 25, 20, 10, 0, 0, 0
	Average: 6.39	Av: 10.6
	Median: 1	Median: 10
	Max: 25	Max: 40
	Standard dev: 7.83	Standard dev: 12.05
new hired people	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	0, 0, 0, 0, 0, 50, 25, 0, 0, 50, 0, 0, 0, 0, 0
	Av: 0	Av: 8.33
	Median: 0	Median: 0
	Max: 0	Max: 50
		Standard dev: 18.09
Mobility	0, 0, 0, 0, 0, 30, 0, 0, 0, 0, 0, 0, 0	20, 0, 17, 0, 0, 0, 0, 0, 0, 25, 0, 0, 0, 0, 0
	Av: 2	Av: 4.13
	Median: 0	Median: 0
	Max: 30	Max: 25
	Standard dev: 7.75	Standard dev: 8.69
Summer Schools	0, 0, 0, 0, 0, 0, 0, 0, 5, 0	5, 5, 17, 0, 0, 0, 33, 50, 0, 25, 0, 10, 33.33
	Av: 0.45	Av: 13.72
	Median: 0	Median: 5
	Max: 5	Max: 50
	Standard dev: 1.51	Standard dev: 16.63
Grants & scholarships	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	0, 0, 0, 0, 0, 20, 10, 0, 0, 25, 0, 0, 0
	Av: 0	Av: 4.23
	Median: 0	Median: 0
	Max: 0	Max: 25
		Standard dev: 8.62
Management	25	0

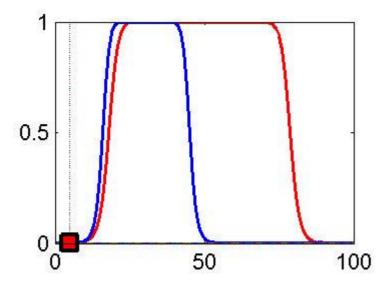
AVERAGE total: 5.4382 %

MAX total: 50%

Standard dev: 10.91

From these results, an overall value of 5% of women can be used as an approximation to the percentage of presence of women within the ARTIST2 network. This number gives a very poor adequacy to the diversity scenario, built from the two previous diversity profiles, functional and offer:





The distribution in red depicts the functional diversity, whereas the one in blue depicts the study of availability of women at the offer. A current presence of only 5% of women among all the members shows an almost null adequacy to both profiles of diversity, indicated by the position of the red square. In numbers:

From these results it seems that there is enough availability of women researchers to increase their presence at the ARTIST2 network, but few things are being done in this concern.

Perception of gender stereotypes

Based on the 12 replies we got, the data are:

Do you realize differences among men and women in terms of work:

Women w.r.t Men (please, select one option)	>	=	<	?
Needs of recognition		11	1	
Aspirations in scaling powerful positions		7	4	1
Attitudes in sharing information	1	11		
Practice of study to increase the knowledge	3	9		

It reflects a centered equality in perception, i.e., no major gender stereotypes, but:

- 57% think that women have less or no intentions wrt men to promote or reach higher positions. This perception fits with the masculine stereotype of being more powerful than the others.
- A feminine stereotype concerning the time women dedicate to continuous learning appears.



Perception of needs for a change

Although the results suggest that some actions must be taken to increase the presence of women at the network, the overall perception is that active involvement actions are not that necessary. This information is obtained from the answers to the questionnaire at the following aspects:

w.r.t. research activities in the NoE, please, mark the adequacy for ARTIST2.

1.- Gender issues can be addressed through the consideration of the gender dimension when **designing** new models, methods, materials or devices.

Concepts	YES	NO
Gender-specific needs are considered in the development of new material	2	10
Different anthropometry, morphology and functional abilities of the male and female users will be taken into account in designing platforms	3	8
Gender is used as a parameter in development of the usability model and then assessing the usability of the resulting prototypes with of a view of the gender difference	4	8
Gender issue is integrated while creating and developing new training courses	5	7
Guidelines for technology that is even-handed with respect to gender are developed	6	6

From this block of answers, the perception that new models or devices are developed without considering the gender dimension wins, although the last result shows a diversity of opinions considering the guidelines for technology.

2.- It would be convenient to develop studies to analyse the **impact** of the activities taking into account the gender dimension. Some examples are:

Concepts	YES	NO
the impact of potential end products specifically in gender related issues in the society will be discussed and results will be reported	5	7
identify and assess the impact of gender on cooperative characteristics, and to ascertain how ICT can lend support to gender balance	5	7
study the benefit that the tools and systems developed cause in the workplace, as regards changing the working culture towards gender equality		8
understand how the technologies developed by the project will impact	6	6



on the lives of women		

Again, the answers that consider a study of the impact from the gender dimension perspective being not necessary win. Number three has a special relevance, with eight answers saying NO compared to four affirmative opinions. Number four, however, shows equality in the intentions of studying the impact of new technologies on the lives of women.

3.- Gender issues are addressed by including women as **potential users**. Involving women in the research process, mainly as end-users, provide valid results for both women and men. Some examples are:

Concepts	YES	NO
Investigate how women and men utilize and value broadband access and to see if there are any differences in order to determine what functionality and services are most important for women and men	3	9
In order to allow equally benefit of the technologies to women and men it is fundamental that they work equally well for them	9	3
System interfaces will be evaluated in terms of user preferences in order to account for gender peculiarities in person-machine interaction	6	6
Gender disparities, if any, will be one of the issues examined, ensuring that future on-line services are valid for men and women	4	8

This is the block showing the most disparity in answers. Concerning the first question, the answers tell that there is no intention to study the functionality of products from a gender dimension. However, the majority of answers to question two shows the need to a technology that can serve well both groups, men and women. The answers to the other two questions depict a trend of non-evaluation of products from a gender dimension.

3.4 Recommendations

From the analysis of the gender barriers and the available offer, a list of actions is selected from a database by the software tool of analysis along with a code for the estimated timing of the action, short (S), medium (M), or long (L) term. These actions are aimed to solve specific drawbacks concerning those areas where gender barriers have been detected. First, the diagnosis for the barriers is summarized.



Diagnosis

Organizational Culture

Values, Decision making and exercise of power, Acknowledgement of women contribution, Climate and relations, Attitudes and harassment, Internal/ External communication, speech-language and image and Work centre, facilities and services

These elements favour the EO and gender diversity principles.

Networks and groups of power, Management styles and Training offer

Although these elements are not an obstacle to achieve the Equal Opportunity and Gender Diversity principle, still they are a hurdle to their achievement.

Organizational Policies

Selection and recruitment policies, Assessment and promotion policies, Timetables, travels and geographic mobility, Salary policies, Training policies and Equal opportunities policies

These elements favour the EO and gender diversity principles.

Personal Conditions

Professional goals, Achievement motivation, Professional interests and career plan, Satisfied with their career development and Satisfied with their acknowledgement

These elements favour the EO and gender diversity principles.

Satisfied with policies and professional career

Although this element is not an obstacle to achieve the Equal Opportunity and Gender Diversity principle, still they are a hurdle to their achievement.

Actions

The following actions have been selected from the database, as a result of the analysis on gender barriers and availability at the offer:

Active support:

- S Rewarding every suggestion or practice promoting the integration of women in any sphere or section within the network.
- S Rewarding and making visible working teams which commit to the consensus for decision making and favour the EO and Diversity principle.



- S Reward those work teams that propose or establish 'good practice' policies to achieve equal opportunities and diversity at the Organization.
- S Make visible the work and progress made by women at any position and work developed.
- M Bringing diversity and the gender point of view to the teaching activities being developed at universities.
- S Make visible the recruitment of women to the organization, their work and the good practices, as well as the changes obtained with the application of the measures proposed, to motivate and let others know about the goals achieved.
- S Acknowledge courses in Gender Awareness as a criterion to favour promotion.
- S Assess experience or knowledge acquired by women through their personal lives as a criterion to favour their selection or promotion.

Gender Equality:

- S Spreading the good practices regarding equality and diversity that are being developed within the institution and making sure that every worker in the staff is aware of these practices.
- S Publishing the good practices that regarding harassment have been implemented by the Organization.
- M Establish relations at different levels within the Institution in order to favour promotion being done under the junction of objective terms and a previous knowledge from the staff responsible of the Organization.
- S Reward the appropriate use of working time, as it allows a best time management, due to the reduction in idle time, it is an important change in the way to understand relation between human and the labour environment, improves the efficiency of the workforce.
- S Economically reward dedication at executive or management positions as a measure that can serve as a reference to the women of the Organization.
- S Diffuse periodically in a visible place the norms and texts related to the principle of retributive equality between men and women that include classifications of job positions and salary scales, allowing the availability of enough information to provide a comparative analysis of the situation of women and men at the Organization, referred to remuneration, having to make reasons for the current situation to appear.
- M Favour subventions to the complementary training of all the staff of the Institution that may not access them due to economic reasons, especially to those training courses that may result in better positions and labour conditions within the Organization.



- S Establish a nursery service and a recreational centre, and the right to perceive economic compensations in concept of children or dependent people caring, giving a preference to those having unshared familiar duties, as a measure that makes easier the access of the staff to training actions.
- S Diffuse permanently the results obtained from statistical data and the analyses of gender diversity and the progress made, as a contribution to eradicate possible abnormal situations.
- S Favour the inclusion of personnel through activities outside the Institution.
- M Establish career plans according to the detected needs.
- M Favour participation and delegation, as a mechanism to allow women workers to help in the design and planning of their work, backing in this way responsibility and self-control and incrementing their motivation at work through a commitment with the Organization.
- M Train on leadership styles which favour working in equality conditions through courses, seminars, working meetings...
- M Include organizational methods based on throughput, quality, objectives... Which favour the inclusion of women in the organization.

Training:

- M Motivate women so they can integrate into work groups, acting as quality circles or creative and innovatory groups.
- M Train women in leadership.
- L Include the Mentoring methodology at the labour practice.

3.5 Difficulties Encountered

The results so far are merely indicative as there are many issues to be improved to perform a sound investigation in the GEO area:

- Get data from ALL the partners
- Study the actual offer, the potential researchers in the Embedded Systems field.
- Better define which members of a research team or institution belong to a network and the degree of partnership
- Develop a list (data base) of corrective actions.



4. Future plans

4.1 Get feedback

The TF members require getting feedback from both, the ARTIST2 Partners and Management as well as from the NoE reviewers.

This report should be carefully read by the above people and give directions for further activity.

4.2 Exploit the results

- a. This report should be revisited after the feedback is received. This will result in guidelines for the future activity of the GAP TF.
- b. The results should be made available through the ARTIST2 website.
- c. Filter and select the possible actions to improve the GEO.

4.3 Second year activity

- a. The questionnaires should be made available on Internet
- b. Implement the suggestions received: data-base of actions, access to reliable information ...