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NEWCOM#

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Definition of the MPA Procedure

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Abstract:	The goal of this deliverable is to define a procedure aimed at monitoring and assessing the performance of project partners in the various activities and their contributions towards the overall NEWCOM# objectives. The MPA (Monitoring Partners' Activity) procedure has the maximal consensus among project partners and contains both quantitative and qualitative indicators of partners' performance. The procedure has been presented at Kick off Meeting in Pisa and has been finalized based on partners' comments. Then it has been submitted to the Executive Board and to the General Assembly for approval. After that, the procedure entered into force.
Keywords:	MPA, Monitoring Partners' Activity, procedure, qualitative indicators, quantitative indicators, integration, partners' performance.

Authors

IMPORTANT: The information in the following two tables will be directly used for the MPA (Monitoring Partner Activity) procedure. Upon finalisation of the deliverable, please, ensure it is accurate. Use multiple pages if needed. Besides, please, adhere to the following rules:

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Executive Summary

This Deliverable reports on the MPA (Monitoring Partners' Activities) procedure, which aims at monitoring periodically the quantity and quality of scientific achievements provided by the institutions participating to Newcom#. The results of the MPA procedure will be used to distribute budget fractions to partners proportionally to the overall institution performance indicators that will be the results of the implementation process.

The principles and algorithms contained in the procedure are very much in line with those implemented in Newcom++, the NoE which generated Newcom#. All weak aspects of the MPA procedure highlighted within the course of Newcom++ by its partners were solved through minor changes in the overall procedure.

According to the schedule defined within the DoW, the MPA procedure has been approved by the General Assembly within the first three months of NoE life. Its first draft was proposed during the Kick Off meeting of the NoE. After wide discussion, partners were given three weeks to recommend changes and propose amendments. The second version of the procedure was first approved by the Executive Board and then by the General Assembly in January 2013.

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1. Introduction

1.1 Objectives of the MPA Procedure

The MPA procedure aims at monitoring Newcom# activities, with the goal of distributing budget fractions as *incentives* for future efforts at the end of first and second year, according to the *quantity and quality* of activities performed in the previous year by Newcom# institutions.

The procedure is defined so as to emphasise efforts devoted to *collaborative (joint) research* within the NoE and all types of *networking activities* described in the DoW. It is shared among all Newcom# researchers that the EC funds provided to NoEs aim at fostering integration of research efforts and management of activities targeted to spreading of network results.

The procedure is applied by monitoring the activities performed by the institutions involved in Newcom#, either if they are participating as beneficiaries or as third party or similar. The list of institutions considered by the MPA procedure is as follows:

1. CNIT/UniBO (hereafter, for short, UniBO)
2. CNIT/UniPI (hereafter, for short, UniPI)
3. CNIT/UniCT (hereafter, for short, UniCT)
4. CNIT/PoliTO (hereafter, for short, PoliTO)
5. AAU
6. Bilkent
7. CNRS
8. CNRS/Eurecom (hereafter, for short, Eurecom)
9. CNRS/Supélec (hereafter, for short, Supélec)
10. CNRS/UniPS(hereafter, for short, UniPS)
11. CTTC
12. CTTC/UPC (hereafter, for short, UPC)
13. IASA
14. INOV
15. PUT
16. Technion
17. TUD
18. UCAM
19. UCL
20. UOULU
21. VUT

1.2 Quality and Quantity

Activities should be assessed in terms of both quantity of results achieved, to check if results are in line with effort declared in periodic reports, and quality (also including will to integrate with other partners of the NoE).

QUANT_E - Quantitative Evaluation – The goal here is to measure the quantity of results achieved by each institution. This should be compared to the effort (PMs, Person Months) dedicated to the activities by each institution.

QUAL_E – Qualitative Evaluation – The goal here is to measure the quality of results achieved by each institution.

1.3 Newcom++ Legacy

The procedure described in this Deliverable is based on the one that was implemented within Newcom++, the NoE which generated Newcom#.

The MPA procedure during the years of Newcom++ was perceived by the Executive Board of the NoE and the EC officers and reviewers as a very useful tool to encourage partners towards very active involvement in the NoE activities, and to monitor the amount of research and scientific achievements provided by the NoE. On the other hand the institutions participating to Newcom++ also raised some concerns regarding the procedure and its implementation which were not solved within Newcom++. These concerns have been carefully considered and discussed within the Newcom# consortium in order to find the best solution and the best compromise between the efficacy of the tool and the efficiency of the entire process.

The major concern, raised by several partners, was related to the implementation of the procedure rather than its definition: it was considered as a cause of additional overhead in terms of reporting towards the Newcom++ Office. This was the consequence of separate design between the MPA procedure and the reporting mechanisms implemented within the project. Therefore, this problem has been solved within Newcom# by jointly defining the MPA procedure, the mechanisms for its implementation and the overall reporting rules set by the Newcom# Office. Indeed, partners will be required every six months to report on their scientific activities and achievements through excel files (see the Appendices of this Deliverable) and word files which contain non-overlapped information. The MPA procedure will then be run based on information contained in the excel files every six months. Only twice, at the end of the first and second year, the run of the procedure will affect budget distribution among partners.

Another concern raised by some partners was about the imperfect transparency of the MPA process. Indeed, the information needed to run it was in the hands of the Newcom++ Office and partners were allowed to scan the information and its processing intermediate results, upon request. In Newcom# it is decided that all excel files, which are the basis for computation of the Quant_E indicators, will be posted on the (private area of the) Newcom# portal, accessible to all partners. The evaluations provided by the WPLEaders, which will generate the Qual_E indicators, will also be made available to all partners through the portal. So, all researchers will be in the condition to compute the final institution performance indicators and the budget fraction distribution.

Finally, a relevant remark was raised by one partner who claimed that the procedure favoured in Newcom++ the large partners which were including several institutions as third parties. This problem has been solved by letting the MPA procedure be defined in Newcom# at institution level rather than partner level. This requires reporting of all data at institution level, a fact that will have minimum impact since in most cases this is needed anyway owing to the legal status of the partners.

Other minor suggestions were taken from the experience of Newcom++, while defining the MPA procedure that will be run in Newcom#. Moreover, the list of [quantitative](#) indicators has changed, reflecting the different programme of activities of Newcom#.

Overall, the MPA procedure has the same spirit as it was in Newcom++: it gives equal emphasis to the excellence of research achievements and to the will demonstrated by researchers to integrate and create solid and long-lasting collaboration among separate institutions.

1.4 Sequence of steps

The sequence of steps followed in order to achieve the objective are the following:

- Presentation of MPA procedure's first draft during the Kick off Meeting in Pisa on 21-22 November 2012. Some parts of the procedure have been modified in Pisa based on comments received by the General Assembly.
- Opening a call for comments to collect feedback with deadline January 13, 2013.
- Finalizing of the procedure by the MPA team and writing MPA procedure's second draft.
- Submission for approval to the EB during the EB conference call on 14 January 2013.
- Writing MPA procedure's third draft.
- Submission for approval to the GA.
- At date of writing the MPA procedure is still under evaluation by the GA.

1.5 Implementation

The procedure will be implemented sending each partners an excel file with pre-filled sheets, based on each quantitative indicator, and asking each of them to fill the sheets only if they are organizer or editor or major responsible of an activity, like meetings or journals. This excel file will be included in this document under the Appendix.

Assessment of partners' activity with the scope of budget assignment will be made twice: at the end of year 1 and 2. However, in order to let partners be aware of how their activities are currently being performed in line with the NoE objectives, the procedure will be run also at M6 and M18, without however bringing to actual budget assignments. The results of these two additional runs will be made available to all NoE partners.

2. The MPA procedure

2.1 Quant_E

Step One)

A number N of measurable *metrics* is defined, and evaluated for each institution, denoted as $Q_{p,n}$ with $n = 1, 2, \dots, N$ and $p = 1, 2, \dots, 21$. These metrics should be extracted from the portal/reports. If data is not available, the correspondent metrics should be set to the older value. At T_0 , all metrics are set to zero.

$[Q_{p,n}]$ is the $p * n$ *Metric Matrix*.

Metric	Q_1	Q_2	...	Q_N
Instit. 1	3	2		2
Instit. 2	2	1		6
...				
Instit. 21	2	4		3

Example of Metric Matrix

The list of metrics is defined later.

Step Two)

For each metric, the maximum value Q_{max_n} is determined, along the column. Then, a *Normalised Metric Matrix* is created, with cell values $q_{p,n} = Q_{p,n} / Q_{max_n}$

$[q_{p,n}]$ is the $p * n$ *Normalised Metric Matrix* with all values in $[0, 1]$.
 q_n (columns) are the *metric types*.

N. Metric	q_1	q_2	...	q_N
Instit. 1	1	0.5		0.33
Instit. 2	0.67	0.25		1
...				
Instit. 21	0.67	1		0.5

Example of Normalised Metric Matrix

Rationale: Normalisation is introduced in order to have homogeneous metrics to handle.

Step Three)

A weight a_n is given to each metric type. The weights should be defined by the Executive Board and represent the policy implemented.

Then the following *Partner Performance Indicators (PPIs)* are defined for each partner p :

ABSOLUTE: $PPIa_p = \sum_{(n=1)}^{(n=N)} q_{p,n} * a_n$

RELATIVE: $PPIb_p = PPIa_p / [B_p / B_t]$

where B_t is the overall effort (PMs) declared by partners for the term under evaluation, B_p is declared by institution p .

Rationale for $PPIb_p$: partners with larger fractions of effort should provide larger values of metrics.

Step Four)

$PPIa_p$ and $PPIb_p$ are both normalised to 1, providing *Normalised PPIs*: **$NPPIa_p$** and **$NPPIb_p$** , i.e. the partner with larger value of $PPIa_p$ (or $PPIb_p$) will have $NPPIa_p = 1$ (or $NPPIb_p = 1$).

N. Metric	q_1	q_2	...	q_N		
Weights	1	0.5	...	1.2	$NPPIa_p$	$NPPIb_p$
Instit. 1	1	0.5		0.33	0.78	0.23
Instit. 2	0.67	0.25		1	0.65	1
...						
Instit. 17	0.67	1		0.5	1	0.8

Example of Computation of NPPIs

Step Five)

The Final PPI_p for each institution is computed as follows:

$$NPPI_p = 0 * NPPIa_p + 1 * NPPIb_p$$

unless the PMs declared in the considered period by an institution are less than 33% of the expected effort obtained by distributing the institution effort assigned in the DoW uniformly over the project expected duration (*inactive institution*). In the latter case, the Final PPI for the institution is computed as

$$NPPI_p = 1 * NPPIa_p + 0 * NPPIb_p$$

and the normalisation at Step Four for $NPPI_p$ is made discarding the inactive institutions.

If needed, the Final PPIs will be normalized again, in order to have the largest value equal to one.

As an example, consider an institution having at the end of the first year $NPPIb_p = 0.7$ and $NPPIa_p = 0.5$, with an effort assigned according to the DoW of 90 PMs. If at the end of the first year the institution declares less than $0.33 * 0.33 * 90 = 10$ PMs, then it is considered inactive and PPI_p is set to 0.5. Otherwise it is set to 0.7.

2.2 Qual_E

All WP (of Research and Spreading) Leaders will be contacted. They will be asked to provide a score for each of the institutions involved (i.e. having declared effort) in the respective WP. Scores will be integer values in the range [1 , 5]. The highest score will be assigned to the best institution(s) in the WP. There is no need to assign all five scores.

The scores will be assigned to institutions with the aim to measure the quality of contribution provided (i.e. excellence of results achieved, but also including an estimate of the level of prompt responsiveness and how easy was to manage the contributions provided by the institution, integrating them with all others), with no intention to measure the amount of effort devoted (i.e. a high quality input has to be ranked better than several medium-quality inputs).

The average score for each institution, **QPPI_p**, will be computed as the mean of all scores, weighted by the effort declared in each WP. Finally, all values will be normalised (to one), defining **NQPPI_p** for institution p.

The scores assigned by the WP Leader to all institutions involved in the WP will be made public to all Newcom# researchers. Track Leaders will evaluate institutions of WP Leaders.

2.3 How to compute the budget fractions assigned

The geometric mean of NPPI_p and NQPPI_p is computed for each institution, obtaining the institution indicator

$$NI_p = \text{sqrt} (NPPI_p * NQPPI_p).$$

This choice guarantees equal relevance given to the effort provided to the NoE activities of spreading and networking, and to the excellence of (joint) research results.

The budget fraction **BF_p** is assigned to each institution **proportionally to NI_p as a fraction of the amount of budget that the same institution contributed to the pool reserved for the MPA procedure (the latter being the 10% of the total budget related to RTD and Other activities set aside as per the outcome of the first GA is Pisa).**

To exemplify, assume that the NoE is participated by three institutions A,B, and C that have nominal budgets, according to DoW, equal to E_A,E_B, and E_C, respectively, and that the MPA budget is assigned only once at a certain time in the project. They contribute to the MPA pool the amounts 0.1*E_A, 0.1*E_B, and 0.1*E_C, respectively (10% of their nominal initial budget as decided at the GA). For all each institutions, the normalised budget fractions NF_{p_X} are computed as

$$\begin{aligned} NF_{p_A} &= NI_{p_A} / (NI_{p_A} + NI_{p_B} + NI_{p_C}) \\ NF_{p_B} &= NI_{p_B} / (NI_{p_A} + NI_{p_B} + NI_{p_C}) \\ NF_{p_C} &= NI_{p_C} / (NI_{p_A} + NI_{p_B} + NI_{p_C}) \end{aligned}$$

The actual budget assigned to the three institutions will be the fraction NF_{p_X} of the total amount devoted to MPA, that is, 0.1*(E_A+E_B+E_C).

If all institutions in the NoE have same score NI_{p_X} (achievable by getting same scores in QUAL_E and same values of NPPI_p in QUANT_E), equal to 1, each will get back exactly the same budget fraction they contributed to the MPA reserved pool.

2.4 Metrics

List of Metrics

Q_1 Number of WP or Task or partner-to-partner official (i.e. minuted) meetings participated by one or more partner's representatives

(e.g. one or two people from the institution participating to a two day WP meeting: $Q_1 = 1$)

Q_2 Number of Deliverables Edited (with one or more researcher as (Co-)Editor(s))

Weight $1/K$ where K is the number of institutions with editors

(e.g. one deliverable edited by four people, two from the given institution: $Q_2 = 1/3 = 0,33$)

Q_3 Number of Deliverables Contributed or Reviewed (one or more researcher as Contributor or Reviewer)

Weight $1/K$ where K is the number of Institutions with contributors

(e.g. one deliverable contributed by four people or institutions as appearing on cover page, two are from the given partner: $Q_2 = 1/3 = 0.33$)

Q_4 Number of WPs/Tasks headed by researchers of the Institution

WP – weight 1

| Editor in Chief of the NEWCOM# Newsletter – weight 1

Task – weight 0.3

Q_5 Number of joint papers with written acknowledgement to NEWCOM++

(i.e. papers with Authors from separate N++ institutions)

Peer Reviewed Conference – weight 0.5

Peer Reviewed Journal – weight 1

Submitted – weight 0

Accepted – weight 1

N++ generated papers with acknowledgement, but not joint – weight 0.2

Papers with no acknowledgement – weight 0

Q_6 Number of visiting researchers (for at least three days) hosted or sent by the institution

Q_7 Number of WP/EB meetings organised or hosted

Q_8 Number of Summer/Winter Schools or Workshops organised or hosted

Q_9 Number of courses offered to the S/W Schools

4 hours – weight 0.5

8 hours – weight 1

Half day lecture – weight 0.5

Q_10 Number of Special Issues Edited on journals, books, books chapters and White Book chapters

| Q_11 Special Sessions Organised at conferences (with N# logo or title in evidence)

Q_12 Number of Special Issues contributed on journals, books, books chapters and White Book chapters

Q_13 Special Sessions contributed at conferences (with N# logo or title in evidence)
Journals – weight 1
Conference – weight 0.5

Q_14 Number of PhD students co-supervised/co-evaluated by separate institutions, weighted by number of years. Co-supervision should be somehow formalised. The date of PhD defense can be later than the end of the NoE.
co-supervision – weight 1
co-evaluation – weight 0.3

Q_15 Winners of Newcom# Awards

Q_16 Organisers of workshops at the premises of industries as defined in the DoW

Q_17 Contributors to workshops at the premises of industries as defined in the DoW

List of Metric Weights

Metric	Weight a_n
--------	------------

Q_1	1
Q_2	1
Q_3	1
Q_4	1
Q_5	2
Q_6	1
Q_7	1
Q_8	1
Q_9	1
Q_10	1
Q_11	1
Q_12	1
Q_13	1
Q_14	1
Q_15	2
Q_16	1
Q_17	1

3. Conclusions

Before the MPA procedure's running, it is required interaction with all partners for the collection of data by excel spreadsheets and by uploading of important documents on the portal. The outcome of each MPA run, after the first and the second year, will be used to allocate financial incentives at each partner.

4. Appendix 1

This section includes an explanation about the excel file used for the collection of data. MPA data collection's file excel is formed by 10 sheet:

- Q1-Q7 – Meetings. This sheet contains all meetings organised by each institution. The table has to be filled with meeting's title and WP, type of meeting, modality, venue, date, organized institution and participants. This table has to be filled by meeting organizer. Minute has to be uploaded on the portal.
- Q2-Q3 – Deliverables. This sheet contains all project deliverables and it has to be filled by the editor's institution. The information it has to contain is deliverable's title and WP, delivery date, editor and contributors. Deliverables have to be uploaded ed on the portal.
- Q4 – WP and task leader. This section contains all leader institution.
- Q5 – Papers. This sheet has to be filled with papers' title, list of authors and papers' state and has to be filled by first authors.
- Q6 – Researchers. This sheet has to be filled with researchers' name and surname, period, hosting and sending institution. The hosting institution has to fill it.
- Q8-Q9 – Schools. This section has to be filled with schools' title and venue, period, hosting institution, lecturers and lecture's number of hours.
- Q10-Q12 – Journals. This section has to be filled with journal's type and name, date of publication, editors and contributors, by main editor's institution.
- Q11-Q13 – Conferences. The table in this sheet has to be filled with conference acronym, special session's title, venue, date, organiser and contributors by each organiser.
- Q14 – PhD. This sheet has to be filled with PhD student's name and surname, start and end dates and the list of co-supervisors. The hosting institution has to fill it.
- Q16-Q17 – Industry workshops. To be filled by main organizer; it contains industry's name, country, city, workshop's title, date, organiser institution and contributors.

Concerning Q15, this information will be easily collected from the Executive Board.

5. Appendix 2

This section shows the 10 sheet introduced in Appendix 1.

Q1-Q7 – Meetings

TO BE FILLED BY MEETING ORGANISER						Hosted/Organised Institution		Participants
NOTE: MINUTES MUST BE UPLOADED ON PORTAL								
Title	WP	Type of meeting	Modality	Venue	Date	Partners' name	Partners' name.	

Q2-Q3 – Deliverables

TO BE FILLED BY FIRST DELIVERABLE EDITOR				Editors		Contributors	
NOTE: DELIVERABLE MUST BE UPLOADED ON PORTAL							
Title	WP	Delivery Date	Partners' name	Partners' name.	Tot editors	Tot contributions	

Q4 – WP and task leader

TO BE EDITED BY LEADER	
WP or Task number	Partners' name

Q5 – Papers

TO BE FILLED BY FIRST AUTHOR			Authors
NOTE: PAPER MUST BE UPLOADED ON PORTAL			
Title	List of Authors	State	Partners' name

Q6 – Researchers

TO BE FILLED BY HOSTING INSTITUTION

		Period		Hosting institution	Sending institution
Researcher's name	Researcher's surname	From	To	Partners' name	Partners' name.

Q8-Q9 – Schools

TO BE FILLED BY ORGANISER

		Date			Hosting/organising institution	Lecturer
Title	From	To	Venue	Partners' name	Partners' name.	Lecture Partners' name

Q10-Q12 – Journals

TO BE FILLED BY MAIN EDITOR

			Editor	Contributors
Type	Date of publications	Title	Partners' name	Partners' name.

Q11-Q13 – Conferences

TO BE FILLED BY MAIN ORGANISER

			Organiser	Contributors
Special Session's Title	Venue	Date	Partners' nam	Partners' name2

Q14 – PhD

TO BE FILLED BY HOSTING INSTITUTION

					Co-supervisor
PhD student's surname	PhD student's name	PhD's title	Start date of PhD	End date of PhD	Partners' name

Q16-Q17 – Industry workshops

TO BE FILLED BY MAIN ORGANISER

					Organiser	Contributors
Industry	Country	City	Workshop's title	Date	Partners' name	Partners' name.