

WP	MONITORING REPORT	Referee	Comment	Notes study team
ProjMgt	Overall	Nedelnik	include in the annex the questionnaires	done - see Annex
ProjMgt	table on page 5	Nedelnik	imbalance in the number of subjects from universities, AV CR and other research organizations	clarified - see p. 5
WP d,i	section 6	Nedelnik	surprised that auditors assessed the first phase of evaluation methodology in 2004	clarified - see p. 15
WP d,i	section 6.1.3	Nedelnik	needs completion, quantification and qualification of the range of respondents	done - see p. 8
WP d,ii	Section 7.2	Nedelnik	explain the sectoral breakdown and especially the inclusion of applied research as a separate category. The taxonomy would, for completeness, have to include categories such as basic research, development, etc.	clarified - see p. 18 & 19
WP d,ii	Section 7.2 1	Malek	If there is the ratio for expenditure on basic research, applied research and experimental development is 30% - 25% - 45%, then it is not clear why four of the six selected fields are basic research and only one area is applied research. What about evaluating experimental development?	clarified - see p. 18 & 19
ProjMgt	overall	Kebo	quality in the links to materials presented in the annexes	done
ProjMgt	overall	Opatrny	It would be useful if all claims in the Report cite particular data in the Appendices. I would appreciate links to the specific sections in the Appendices, which would make the reading more efficient	done
ProjMgt	overall	Kebo	The authors refer to a number of interviews in R & D institutions. What is missing is a description of these "information sources".	done in monitoring report
WP a	Chapter 2.1 R&D Inputs	Musilova	The report limits itself to presenting the conclusions on the percentile shares of the individual types of funding following directly from the tables contained in Annex 1, and in some cases to the formulation of qualitative conclusions, without any analysis of positive and negative aspects or any analysis of the reason for the negative aspects. Since in the case of c) not even the source of the data, the period they refer to or the methodology for obtaining the data are given, it is not possible to judge how reliable they are	The comment mainly refers to the presentation of the results of WPA in the Interim Report. Regarding the analysis of positive or negative aspects, more qualitative analysis has to amend the presentation of quantitative data in the next months. Regarding The case of C) (p.4 of the interim report and p 14. of the Annex), the Interim report should refer to the source (OECD) and might include the table of the annex - then the structural mismatch can easily be seen.
WP a	Chapter 2.1 R&D Inputs	Opatrny	At the end of Sec. 2 I would appreciate some synthesis of the "input" and "output" data and their comparison with other countries, especially the benchmark ones. How much money (measured in EUR and in fractions of GDP) and how much human resources are necessary to produce a scientific paper in the Czech Republic and elsewhere? What is the impact measured by citations generated by a unit of input resources here and elsewhere? How do these figures differ for different research fields and for different types of institutions? What are the trends?	A comparison between input and output data can only be accomplished in the subsequent analysis. As costs of a researcher depend largely upon costs for salary and equipment the value of such a cost/paper in international comparison does not make lot of sense.
WP a	Chapter 2.1 R&D Inputs	Munich	It should be clearly explained early at the beginning of the IR which Czech specific institutions are included into two broad R&D sectors discussed in the section. For example, Government Sector includes the Academy of Science (its institutes) but the footnote #1 mentions only Public Research Organisations.	We ask our colleagues from Technology Centre to provide such a list for the second interim report, which will be attached as an Annex.
WP a	Chapter 2.1 R&D Inputs	Opatrny	Recently, quite detailed analysis of the Czech R&D system has been published by the Czech Statistical Office (CSO), containing quite a lot of information of the similar kind as this Report and its Annexes (economic data and their comparison with the situation abroad, bibliometric results, statistics of citations, etc.). I would appreciate if the authors mention the main similarities and differences between their results and those by the CSO.	Will be done in detail in the 2nd Interim Report. The data published in OECD and EUROSTAT are however stemming from the same source as the national data (CZ statistical office), hence differences may only concern interpretation data.
WP a	Chapter 2.1.3	Opatrny	The relatively high proportion of Government funding of business research is something that has been catching the eye here for some time. I would expect that the report would be more specific in commenting this fact: is it good or bad? Why the high proportion „should not necessarily be emulated”? What exactly happens with the public money that goes to the industry here and in the countries with the high proportion of government funding of research in the private sector? The Report should contain more detailed analysis that could help with making decisions in this issue.	The question is - whether the public money provided to business enterprises is used well. For a detailed analysis that we need to retrieve the information from the survey and further qualitative interviews.
WP a	Chapter 2.1.3	Kebo	Higher Education Sector (HES) - The link to the current state of affairs should be made here	???
WP a	Chapter 2.1.3	Kebo	Governmental Sector - the declaration that a significant proportion of R & D funding is from private sources, when the difference to the bad Higher Education is only 7%.	Statement is wrong: HERD funded via national private sources is 1% in 2008 whereas GOVERD funded by private sources is 11% (and was even higher in 2007). Also compared internationally the Government R&D sector shows higher funding levels from Business Enterprises than the EU-15/27 average (9%) whereas the Higher Education Sector is far below EU-15/27 average.
WP a	Chapter 2.1.4	Opatrny	"increase in share for fundamental research from 25% to 30% and a drop for applied research from 30% to 25%." - I would appreciate more elaboration of this division: how do these numbers look like in other countries? What can be the explanation of this shift? Could it be that the same activity that has previously been described as „applied research” is now in grant applications described as „fundamental research”?	We did not have the time yet to get to know the reasons this increase/decrease in the Czech Republic.
WP a	Chapter 2.1.4	Opatrny	"the Higher Education Sector that so far has failed to attract significant amounts of R&D funding from the Business Sector." It would be useful to hear some more discussion of why it is so: is it because of the inability of Universities to offer interesting results to the business or because the business enterprises are not motivated to go to the Universities with their requests? What should be done to change this situation?	This will be investigated further, as a first step it was necessary to look at the status quo of funding.
WP a	Chapter 2.1.4 - HES middle of the page	Kebo	This finding requires a clarification by the authors, what is it based on and what are the causes	See above
WP a	Chapter 2.1.4.	Jurajda	What is the information content of providing the shares of basic/applied research spending when definitions are not clarified and, more importantly, harmonized for international comparison (which is, therefore, not provided)? Also, for the purposes of the ongoing reform of R&D funding, it is imperative to know for each major field of science its share on total funding and its share of funding coming from grants as opposed to institutional funding. These shares should then be compared internationally in the next report.	The definitions of basic and applied research applied are those of OECD. Only at this broad level an international comparison can be achieved, but I agree that due to lack of clear boundaries the use of this type of comparison is limited. When comparing use of R&D funds it will be more important to look at the types of research grants awarded in the Czech Republic vs. other countries which may serve as a point of reference.
WP a	Pp 2-3:	Munich	The whole description is not clear enough as concerns the original source of R&D funding, intermediate agencies and the type of institution where money are spent.	The idea was to provide a first, macro-view on R&D funding in the Czech Republic. The role of intermediate agencies and type of institutions is a) considered in the governance part of the report and b) requires further investigations in the next steps of the project.

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WP a	Pp 4, 24	Munich	It is becoming recognized in the literature and OECD publications too, that there is no strict line between fundamental (FR) and applied research (AR). This makes any comparison of funds allocations between FR and AR very questionable.	I fully agree.
WP a	Annex Chapter 4	Opatrny	„Most interestingly, funding flows from the Business Enterprise Sector towards the Higher Education Sector are still at very low levels and show little development since 1999, which is a confirmation of rather weak science-industry linkages in the Czech Republic.“ It would be useful to hear more discussion why is it so: is because of the inability of Universities to offer interesting results to the business or because the business are not motivated to go to the Universities with their requests? What should be done to change this situation?	See above, will be accomplished for the next report
WP d,ii	Chapter 2.2 R&D Outputs	Musilova	errors and inconsistencies, which can be easily corrected in a later version of the report: Examples: 1) The reversed headings for the columns for CPP/JCSm and CPP/FCSm in comparison with JCSm and FCSm. 2) The contradictory commentaries regarding the inclusion of self-citations in CPP on pages 9 and 10 of Annex 2: "The fourth indicator is the average number of citations per publication with exclusion of self-citations (CPP)" – Annex 2, page 9; "As discussed above, self-citations are included in the calculation of the ratio's CPP/FCSm and CPP/JCSm" – Annex 2, page 10, whereas the CPP data do not include self-citations, while the JCSm and FCSm data clearly include all citations. 3) The unclear meaning of the statement "... the huge shift from publications with no collaboration at all, towards publications resulting from national cooperation, thereby showing that internal cohesion has improved in the Czech Science system" (page 6 of the report) in the context of the tables in Appendix F and Appendix G of Annex 2.	The first two issues are dealt with, I have got no idea wh is meant with the last statement, as the report discusses the figure, and distribution of output share for the CR ovi the years, and the data labels in F and G support this finding, I would say ...
WP d,ii	pp. 4, intro 2.2	Munich	The intro on bibliometric analysis should state clearly that it considers only output, not productivity and that citation impact provides very imperfect information about quality of research. Otherwise, most readers not familiar with bibliometrics will make wrong conclusions.	I will have a look at this in the introduction, and will mak this more clear in the introduction.
WP d,ii	Chapter 2.2 R&D Outputs	Munich	The part of the IR on R&D publication outcomes, does not explain carefully enough that evaluation of research institution or of a field within a country has to consider three fundamental entities together: (i) the volume of research output, (ii) average quality of research output, and (iii) inputs used to create those outputs.	Linked to the previous comment of Munich, and will be incorporated in the text as well.
WP d,ii	Chapter 2.2	Opatrny	Are the authors convinced that WoS alone is reliable enough to get qualified conclusions? Should other databases (Scopus, etc.) not be taken into account? Is it not dangerous to endorse only the WoS position at the bibliometric market?	As WoS is currently allowing for international macro-bibliometric comparisons, as Scopus misses in some 25% all covered publications address information (over 4 milli publications are suffering from this). One of the problem: related to using Scopus compared to WoS is the much broader coverage, resulting is huge shifts in scores for bibliometric reference values, and nobody has got any id yet how this work out in macro bibliometric studies (mor is not always better). And finally, since the Scopus classification system is under lots of criticism, this is bein revised (actually by my colleagues here at CWTS). so thi: means no field normalized impact measures can be produced by using Scopus compared to WoS).
WP d,ii	Chapter 2.2	Jurajda	Given the dramatically increasing bibliometric output and citation impact in locally published journals generating little international citation impact, one needs to see separately international and locally produced IF output, in social and behavioral sciences in particular. The increasing impact noted in the report may be a mirage of local citation communities with little international impact.	We are currently discussing this with Stepan J, but feel ti goes beyond the scope of the current study. We will get back to him on this, but feel the discussion he wants to start here only interferes with the current audit, and is strongly related to their funding/evaluating model (the grinder), and we do not want to get involved in this discussion on yet another level of playing field as the current study.
WP d,ii	Chapter 2.2.1	Opatrny	"the number of citation received (which are indicators of impacts) by researchers from the Czech Republic is more than six times higher in 2005-2009 than in 1993-1997." Do the authors have any idea what was the main cause of this dramatic change? It would be interesting to see what are the contributions of the Higher Education Sector and of the Government Sector to this change.	This is being tackled by the part Rodrigo worked on, and part of the second step of our analysis, namely the sector and institutional analysis.
WP d,ii	Chapter 2.2.1	Kebo	It would be appropriate to clarify the functions of publications and comment the statement made.	This comment by Kebo is unclear by me, and I cannot comment on that, sorry !
WP d,ii	Chapter 2.2.2	Opatrny	It would be useful to give reference where are the data on which the conclusions are based: is it Appendix E od Annex 2?	provided for
WP d,ii	Chapter 2.2.4	Jurajda	What is meant by "productivity per researcher"? FTE appointment counts? It would be preferable to know (and compare internationally) the number of physical researchers in the country's government sector (can be obtained from the LFS or government payroll statistics). One would also like to see the shares of major fields of science on bibliometric output relative to their shares in funding.	This is still open for discussion, I feel the people would lli to see the productivity per reseracher, but as I stated clearly, this type of data material is difficult to obtain, an thus hard to interpret and compare with one another.
WP d,ii	Annex p. 117	Opatrny	Table 17 should be directly accompanied with a brief explanation of the abbreviations. It is claimed in the text that „An extensive explanation of the indicators is given in Appendix B", however, Appendix B in this Annex has nothing to do with bibliometry as it deals with R&D&I Governance & Management; one should go to Appendix B of Annex 2	provided for
WP b&c	Chapter 3.1	Jurajda	Can you highlight the specific implemented value added of any of these National Plans and strategies? Have any of these strategies been properly evaluated?	later
WP b&c	chapter 3.2. (Last paragraph)	Malek	Not an "amendment of 2002 R & D Act" but a new law	adjusted
WP b&c	Chapter 3.4.1	Opatrny	„The Technology Agency and Grants Agency operate both at the policy-making level ..." I am not sure if I understand this statement.	adjusted and improved wording
WP b&c	Chapter 3.4.1 – Agencies, page 11 last paragraph	Kebo	The description of the agencies (TAČR and GACR) is completely subjective and inconsistent with the reality	improved
WP b&c	Chapter 3.4.2 – RDI Council	Kebo	The authors note how the Council will be converted, which should probably be mentioned in the conditional	adjusted
WP b&c	Chapter 3.4.2 – RDI Council	Kebo	The description of the Academy should be completed with links to the R&D support system and a specification of the benefits as well as the drawbacks arising from the inefficient financing of ZV [??] not directly linked to education	at a later stage
WP b&c	Chapter 3.4.2.1	Opatrny	It would be nice if the author elaborate more on the statement „The Czech R&D&I Council benefits from the presence of the Prime Minister."	improved

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WP b&c	Chapter 3.4.2.1	Jurajda	How can an R&D&I council composed of members employed full-time elsewhere and operating with essentially no funding for its own analyses and virtually no staff or administrative backbone fulfill its role of a "central coordination body" for the ongoing reform and for the future of Czech R&D&I management? Does any country you are aware of operate with so little analytical support for annually distributing about 1bln Euro of R&D funding?	at a later stage
WP b&c	Chapter 3.4.2.3	Opatrny	It would be useful to specify the mentioned „direct resources of the institutes” in more detail	done
WP b&c	Chapter 3.4.2.3	Opatrny	Re the Academy, I would appreciate more details on how the authors came to this conclusion: is it based just on the bulk economic data covering the Academy as a whole or does it reflect the situation of most institutes?	done
WP b&c	Chapter 3.4.3	Opatrny	„We notice also the constant increase in the share of targeted funding allocated to the Ministry of Industry and Trade, despite the creation of the Technology Agency.”It would be useful if the authors elaborate on this topics, saying more about their views on the usefulness of this fact.	at a later stage
WP b&c	Chapter 3.5.1.2	Opatrny	Broad objectives - I hope that at some later stage the Report will contain a more specific information that would help a little bit in solving this dilemma	at a later stage
WP b&c	Chapter 3.5.1.3	Opatrny	I think this is a useful feedback. I would appreciate if the authors could specify here those „sporadic exceptions” as particular examples of a good practice.	cannot be done yet - will do so in the future, if there are a 'best practices'
WP b&c	Chapter 3.5.2	Opatrny	“all ministries rigorously applied the prescribed processes” I would be interested whether the authors are aware of the practice of the Ministry of Industry and Trade	we did state that this was based on "information currentl at our disposal", and we do expect practice to be diverge from theory and apparences
WP d,i	Chapter 4	Munich	At various places of the report including appendices, the report is not carefully enough distinguishing between (i) methods used to evaluate scientific achievements (Evaluation methodology - EM) and (ii) rules guiding allocation of public funds (Funds allocation methodology - FAM). This being left unspecified, the analysis and presentation sometimes becomes ambiguous and lacks clarity.	we have adapted the text (ch. 6 of our annex C); ProjMgt please adapt Intro to chapter 4 of IR accordingly; a more detailed analysis & recommendations are subject of the next reports
WP d,i	Chapter 4.1 – Research Intentions	Kebo	It would be appropriate to specify the % of the total in order to avoid misinterpretations, for example during the evaluation of the VZ [??] through cluster analysis and the Minister was interrogated in Parliament.	this is not clear to us - will be sorted out in the next repo (detailed analysis of inst.fund.
WP d,i	Chapter 4.2 – the Point system	Kebo	The authors had at their disposal 2 versions of the 7 methodologies – their information sources represent therefore about a third	We have added a short introduction explaining our data basis and have adapted ch. 3.2 and 3.3.3 of AC; we have now included the 2010 version, too (and in addition, we had summary descriptions from the Technology Centre about contents of the other versions); ProjMgt, please ta this into account in ch. 4.2.1 of IR
WP d,i	Chapter 4.2.2	Kebo	This is a list of negative comments on the evaluation methodology. The authors should indicate where this information comes from - resources?	we adapted ch. 3.4.2 of AC; Proj.Mgt, please take into account for chapter 4.2.2 of IR
WP d,i	Chapter 4.2.2	Opatrny	This section is more or less just a collection of opinions on the Evaluation Methodology. I would appreciate if the authors of the Report comment more on their relevance	see prev.remark; we do not directly comment on relevan our own assessment is written down in ch. 6 of AC
WP d,i	Chapter 4.2.2 page 20	Munich	It is mentioned that authors do not know of anyone performing a simulation of the effect of the use of the EM for the distribution of institutional funding. There had been simulation done by the RVVI secretariat and it appeared in the official document "Preparation of Evaluation Methodology 2010".	good to know; we will contact Munich and analyse his material for the next report (we did not know about the document he quoted)
WP d,i	Chapter 4.2.3	Opatrny	It is good to offer a comparison of evaluation systems in different countries. I would appreciate more details in this comparison	will be expanded in next report (more about funding and add. Countries)
WP d,i	Chapter 4.2.4	Opatrny	This section contains rather general statements. I would appreciate if concrete arguments are applied to support them.	we remain with our conclusions but add in the intro to ch of AC how we reached them. Examples, numbers, calculations are planned for the next report.
WP d,i	Pp 19, 28	Munich	In addition to what is mentioned, value added of the EM is that it evaluates all recipients of institutional support in the country and that it has helped to develop info system on research outputs. Among negative attributes of the EM it should be mentioned that it does not generate evaluations benchmarked to world quality standards in each field	we include these points (info systems to 3.4.2, quality standards to ch. 6, both of AC)
WP d,i	Pp 19:	Munich	The Academy did not finish development of its own internal evaluation system yet – the system is still at the early stage of development.	corrected in the Annex Report, PrjMgt. also please correc in Final report (p. 19, first line).
	Pp 20	Munich	Other sources of university funding (not listed) are (i) funding of educational activities (notably greater funding pillar compared to R&D institutional funding), (ii) specific research funding of research related to PhDs, (iii) investmt (maintenance and upgrades/expansions) funding chapter for education.	will be included in the next report, where we do a more detailed analysis of inst. Funding
WP d,i	Pp 21	Munich	The IR reviews R&D evaluation and funding systems in the Netherlands, France and the UK. Since I know the UK system quite well, I find the overview (in Appendix 1, starting on page 90.) rather incomplete and sometimes even misleading.	some corrections will be made now, but what is perceive as missing (information about allocation of funding) will included in the next report)
WP d,i	Annex p. 85, Sec. 333	Opatrny	The information about the Evaluation Methodology 2010 is not completely correct,	corrected in the text (we had no translation at the time, only a summary from the TC)
ProjMgt	Chapter 5	Opatrny	The authors should be more specific: do they know of particular high-quality institutions that score low in the evaluation system and would be unjustly under-financed and do they know of particular lowquality institutions that would get the money since they score high? Which „significant and high-quality research resources” in particular are endangered?	covered at the S&T field level
ProjMgt	Chapter 5	Opatrny	I would expect that the Report should give us a detailed analysis of what would be the advantages and disadvantages of various models of coexistence of the Academy and Universities and would appreciate hints of what could be the best for the future of the Czech research. I would also appreciate a more thorough comparison of the performance of the Czech Academy of Sciences with its counterparts in other countries (especially the Max Planck Society in Germany)	will be done in a later stage
ProjMgt	Chapter 5	Opatrny	„Feedback is urgently needed about the connection between funding and the achievement of these wider societal objectives.” I strongly agree with this statement. But I miss some hint as how to accomplish such a feedback.	wording improved
ProjMgt	Chapter 5	Opatrny	Although it is well known that the Academy uses its own evaluation system, I am missing an independent analysis of how good the system is.	not sure whether this belongs to the tasks of this audit
ProjMgt	Chapter 5 - Conclusions	Kebo	The authors should indicate here the cause for this gap. Not only universities should here develop activities and be more motivated. Does support for engineering education truly exist in the Czech republic?	will be done at a later stage

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ProjMgt	Chapter 5 - Conclusions	Kebo	The ESF was created to encourage convergence of less developed regions, as the authors should know.	point taken
ProjMgt	Chapter 5 - Conclusions	Kebo	When describing the national RDI strategy one should clearly define the National Innovation Strategy (NIS) – is that one and the same? Are the authors having a third generation NIS in mind?	improved wording
ProjMgt	chapter 5.2	Nedelnik	I do not understand the sentence: "unhealthy separation of higher education and research, research institutes of the Academy and the Universities".	improved wording
ProjMgt	Recommendation 1.		I would appreciate if the authors would be more specific about the „significant risk“ and the expected „damage“ that would result from application of the new allocation system. It would be good if the authors comment more on the costs and risks of such a „do nothing“ approach	done
ProjMgt	Recommendation 1.	Munich	Recommendation no.1 presented at the very end of the IR (section 5.4) is very strong. I support the recommendation but it should be accompanied with explicit and straightforward arguments why any alternative temporary solution would be inferior one.	done
ProjMgt	Recommendation 2.		I completely agree with this recommendation. However, in the present form I find it rather general and vague and would appreciate if the authors in some later stage of the project provide us with more detailed suggestions.	will be done at a later stage