

# **Basic Principles of the Evaluation of the Research and Professional Activities of the Institutes of the Czech Academy of Sciences for 2010–2014**

## **Preamble**

One of the most important tasks of the management of the Czech Academy of Sciences (hereinafter “the CAS”) and of its institutes is **permanent emphasis on the increasing of the quality of the scientific and professional activities**, the involvement of the institutes in international scientific activities and quality realization of other functions of the CAS given by the relevant legislative regulations. In order to ascertain the level of dealing with this task, the management of the CAS has been organising regular evaluation of its institutes since the beginning of the existence of the CAS in 1993. This evaluation serves i.a. for differentiated institutional funding of the institutes.

***The evaluation of the research and professional activities of the institutes of the CAS for 2010–2014** is carried out based on the Act No. 130/2002 Coll., on the Support of Research, Experimental Development and Innovation from Public Sources and on the Amendment of Some Related Acts (Act on the Support of Research, Experimental Development and Innovation) as subsequently amended. It is the basis for the fulfilment of the provision of article 7, paragraph 7 of this act: “The provider may adjust the amount of the support according to more detailed evaluation using internationally acknowledged methodologies, having published these along with the results of the more detailed evaluation and the rules of the adjustment of the support before its provision.”*

## **Article 1 Basic Principles**

### **1) Evaluation objectives**

The evaluation pursues the following basic objectives:

- a) To acquire qualitative and quantitative information about the position of science in the CAS in the time period of 2010–2014 in the national, European and global contexts.
- b) To acquire information for strategic management of the CAS as a whole, including the financing of the institutes as one of the component aspects of the management.
- c) To mediate independent and comparable evaluation and feedback for the managements of the individual institutes and teams of the CAS.

### **2) Evaluation principles**

The evaluation is based on the following principles:

- a) informed peer-review;
- b) field character: the evaluation will be carried out for the individual fields in order to respect their specifics;
- c) two-phase character: the evaluation will take place in two subsequent phases;

- c1) foreign field-based informed peer-review of the *outputs*<sup>1</sup> of the scientific activity of the institutes and their scientific teams (Phase I);
- c2) international informed peer-review of the institutes and their scientific teams (Phase II); the results of Phase I of the evaluation will be one of the inputs of Phase II;
- d) separation of evaluation from financing: the final reports of the evaluation will not include financial recommendations; the decision making concerning the financial affairs is a matter of the management of the CAS;
- e) transparency: continuous provision of information within the CAS will be part of the preparation and the evaluation itself; the conclusions of the evaluation will be made accessible to the public in an adequate way.

The orderly course of the evaluation will be supervised by the Coordination Board (hereinafter “Board”) (see Article 2). The Head Office of the CAS (hereinafter “Head Office”) is responsible for the organisation of the evaluation, in cooperation with the Library of the CAS (hereinafter “Library”), which ensures the preparation of the materials.

### 3) Basic principles of Phase I of the evaluation<sup>2</sup>

- a) The individual outputs of the scientific activity of the institutes and their *scientific teams* (the term “scientific team” is specified in Article 3) will be evaluated during Phase I of the evaluation.
- b) The evaluation will take place in 27 fields that comprise 5 main fields. The fields are further categorised into 13 *field panels* – see Article 3.
- c) Each *institute* (i.e. an institute of the CAS) registers for the evaluation by means of an *application* on prescribed electronic forms. The requisites of the application are specified in Article 4.
- d) An institute registers each of its scientific teams with one field panel and one field within the framework of this field panel.
- e) Prior to the evaluation, the content of the presented applications will be checked from the viewpoint of the formal requisites and completeness of the content. The check will be carried out by the Science Support Division of the Head Office of the CAS (hereinafter “Science Support Division”), and the application will be returned to the institute for completion if need be.
- f) The input materials for Phase I of the evaluation will include Bibliometric analysis (see Article 5, **Appendix 4.1**). The Library is responsible for the processing of the Bibliometric analysis.
- g) The scientific quality of the outputs of each scientific team achieved in 2010–2014 (hereinafter also “the period under evaluation”) and presented for the evaluation according to the principles described in Articles 4 and 5 will be evaluated within Phase I of the evaluation.
- h) Each output presented for evaluation will be classified by one of the five *quality levels* on the *quality level scale*. The *quality profile* of the scientific activity of a scientific team or institute will result from this classification. The evaluation of the presented outputs will be carried out by international *field panels*.

---

<sup>1</sup> An **output** has the form of publications in professional journals, monographs, chapters in monographs, patents, implemented devices, technologies, and such like. A **result** is a comprehensive complex of findings that may consist of various outputs.

<sup>2</sup> The terms defined in the following articles of the document are marked in italics.

- i) The outputs for Phase I will be presented in the language of the origin; the communication with the field panel and the evaluators will take place in English.

The method of the formation of the field panels and the rules of the evaluation within Phase I are specified in Article 5.

#### **4) Basic principles of Phase II of the evaluation**

- a) The institutes of the CAS as a whole as well as their scientific teams will be evaluated in Phase II of the evaluation, particularly from the viewpoint of the quality, relevance and vitality/perspective of their work (for more detailed information, see Article 6, paragraph 3).
- b) Phase II of the evaluation will be carried out by 13 international commissions corresponding to the 13 panels in the Phase I (hereinafter a “field commission” or “commission”).
- c) The materials for Phase II will be presented in English; the communication with the commissions will take place in English.
- d) Phase II will include on-site visits to the institutes by the commissions aimed at the evaluation of their functioning.
- e) Phase II of the evaluation will result in final reports prepared by the relevant commissions for each institute and each team (for more detailed information, see Article 7).

The method of the formation of the commissions and the rules of the evaluation within Phase II are specified in Article 6.

## **Article 2 Coordination Board**

The evaluation will be coordinated by the **Coordination Board** (hereinafter “Board”). Its chair, deputy chair and other members are appointed by the President of the CAS following approval by the Academy Council of the CAS and the Council for Sciences of the CAS.

The Coordination Board:

- a) supervises the course of the evaluation from the organisational viewpoint and from the viewpoint of the abidance by the principles of the evaluation, not intervening in the professional evaluation itself by the field panels in Phase I and by the commissions in Phase II of the evaluation;
- b) resolves disputes concerning the formation of the scientific teams for the purposes of the evaluation;
- c) resolves uncertainties and relevant questions from the field panels and commissions;
- d) monitors differences in the evaluation between fields and notifies the field panel chairs or chairs of the commissions of disagreements in the evaluations or differences in the demandingness in related fields.

## Article 3

### Field and Organisational Structure

#### 1) Fields, main fields, field panels<sup>3</sup>

Phase I of the evaluation takes place in 13 field panels that combine a total of 27 fields.

Each field is included in one of the 5 main fields. For the detailed field structure, see **Appendix 3.1**.

- a) The term *field* means a group of scientific disciplines related by content.
- b) A main field is a set of content-related fields<sup>4</sup>.
- c) A *field panel* is a group of experts who will coordinate the evaluation of the scientific outputs submitted to the fields coming under that field panel during Phase I of the evaluation. The panel is led by the *panel chair*. The other experts who comprise the panel are the *panel members*.
- d) The *evaluators* are the experts who in the Phase I evaluate the outputs submitted for evaluation. Each field panel is assigned a group of the evaluators whose professional orientation corresponds to the fields assigned to the given field panel (or to some of these fields). The evaluators are not panel members.

#### 2) Institute

For the purposes of the evaluation, an institute means a public research institution established by the CAS. The Centre of Administrations and Operations of the CAS and the Library, which are focused on specific areas of the R&D infrastructure, are not subject to this evaluation.

#### 3) Scientific team

- a) A *scientific team* (hereinafter also “team”) is the basic organisational unit for the purposes of the evaluation. The team is the smallest unit of the evaluation structure on whose level the aggregated results of the evaluation will be published.
- b) A team is defined as a group of *researchers* and *other workers* collaborating on common task and who meet the conditions listed under items c), d), e) (hereinafter also “team member”). A team is usually identical to a research unit defined as an organisational unit in the official organisational structure of the institutes. With respect to the number of members, some organisational units may be divided into several teams or merged in a single team for the purposes of the evaluation, based on the decision of the management of the institute. The contribution of the units providing primarily support services at the institute, research services or administering the research infrastructure will be evaluated in Phase II as part of the evaluation of the whole institute (according to Article 3, paragraphs 5 f) and g)).
- c) For the purposes of the evaluation, a researcher is a worker who was in any part of the period under evaluation, i.e. 1 January 2010 – 31 December 2014, classified at the institute as “researcher” within the meaning of Article III, paragraph 1 of the Career

---

<sup>3</sup> The division into fields of science and technology, panels and field groups and the characterisation of the fields for the purposes of the evaluation are taken over from the OECD Frascati Manual and adjusted to the structure of research at the CAS. Appendix 3.1 contains an overview accompanied by bibliometric categories according to Journal Citation Reports (JCR) and content characteristics of the categories taken over from JCR.

<sup>4</sup> The field groups respect the content categorisation according to the initial list of the OECD; they are only informative from the viewpoint of the organisation of the evaluation.

Structure of the CAS<sup>5</sup> or was an emeritus researcher of the CAS within the meaning of Article IV of the Career Structure of the CAS or of the internal regulations of the given institutes.

- d) Other worker means a worker who was in any part of the period under evaluation, i.e. 1 January 2010 – 31 December 2014, classified at the institute as research assistant or PhD.-student within the meaning of Article II of the Career Structure of the CAS and is not a researcher according to item c) above. The scientific outputs of other workers may be reported within the framework of the team results presented in Phase II of the evaluation.<sup>6</sup>
- e) Only a worker who had employment contracted with the institute in any part of the period 1 January 2010 – 31 December 2014 may be included in the research team for the purposes of the evaluation; neither an agreements on work performance, nor an agreement on working activity is regarded as employment.
- f) For the purposes of the evaluation, a researcher or other worker (according to item d)) may be classified as a member of just one team of the given institute; however, he or she may be concurrently listed as a member of a team of another institute.
- g) Technical<sup>7</sup> and administrative workers are not regarded as members of teams from the viewpoint of the evaluation. The data concerning them are only listed summarily for the institute as a whole (Article 4).
- h) The Board will decide about the admissibility of a team consisting of less than 4 researchers<sup>8</sup> based on a written explanation included in the application and following discussion with the director of the respective institute (see Articles 2 and 4).
- i) Prospective suggestions of the team structure differing from the official organisational structure must be clearly described and substantiated in the application (see Article 4). These proposals will be decided by the Board (Article 2) during the verification of the applications.

#### 4) Assignment of a team to a field

Each team is assigned by the institute to one field panel and one field listed in **Appendix 3.1**.<sup>9</sup>

### Article 4

#### Requisites of the Evaluation Application

##### 1) Evaluation application

Each institute submits the *institute evaluation application* (hereinafter “application”) within the given deadline, whereby it registers all its scientific teams for evaluation.<sup>10</sup> The application means an electronic document containing all the materials for Phases 1 and 2 of the evaluation specified below. The application is prepared by the institute in the prescribed content structure. The application is submitted by the director of the institute to the Science Support Division

---

<sup>5</sup> The Career Structure of Academically Qualified Employees of the Czech Academy of Sciences (Internal Norm 5/2008).

<sup>6</sup> See Article 4 “Requisites of the Evaluation Application”.

<sup>7</sup> Not including laboratory technicians within the framework of the research teams.

<sup>8</sup> An example of such exception may be a team consisting of young workers whose classification does not correspond to the provision of Article 3, paragraph 3, item c) who work, for instance, under the guidance of two workers who meet the conditions of paragraph 3, item c).

<sup>9</sup> See also Article 4 “Requisites of the Evaluation Application”.

<sup>10</sup> Article 3.

through an electronic application designated for this purpose, with a dated and signed title page of the application attached. Full texts of the applications are to be submitted as of 30 April 2015.

## 2) Parts of the application

The application consists of the following parts:

- a) Part 1: general data concerning the institute and the teams.
- b) Part 2: materials for Phase I of the evaluation prepared for each team of the institute.
- c) Part 3: materials for Phase II of the evaluation prepared:
  - c1) for the institute as a whole;
  - c2) for each team of the institute.

## 3) Requisites of the general part of the application

- a) The name of the institute.
- b) The basic structure of the revenues and expenditures<sup>11</sup> in the individual years of the period under evaluation.
- c) A scheme of the organisational structure of the institute in accordance with the Organisation Rules valid as of 31 December 2014.
- d) The sum of the full time equivalents of technical<sup>7</sup> and administrative workers as of 31 December 2014.
- e) The division of the institute into *scientific teams for the purposes of the evaluation*.<sup>12</sup> The teams are labelled with ordinal numbers and names.
- f) The data for each team contains:
  - f1) the field panel (for field panels that contain several fields also the field) in which the team is to be included (in accordance with Article 3 and **Appendix 3.1**);
  - f2) the list of the names of all researchers in the team during the period under evaluation (with indication of former members of the team) and their average total full time equivalent<sup>13</sup>, separately for the categories 3a through 5 and 1 and 2 of the Career Structure. The list of the names must be submitted by 31 January 2015;
  - f3) the number of the outputs with affiliation to the institute within the period under evaluation authored or co-authored by members of the team, in the prescribed structure according to type.

## 4) Requisites of the application for Phase I of the evaluation

The materials for Phase I of the evaluation are as follows:

- a) The list of  $2\bar{k}$  (different) outputs, where the value  $\bar{k}$  corresponds to the average aggregate full time equivalent<sup>13</sup> of the team's researchers. The number of outputs determined in this way will be rounded to a whole number.<sup>14</sup> Based on the justification of the director of the institute, the team can submit  $2\bar{k} + 0.5\bar{d}$  (different) outputs, where the value  $\bar{d}$  corresponds

---

<sup>11</sup> Indicators A.I, A.II, A.III, A.V, A.VI, B.I and B.VII for the main activity. These data will be filled out in advance in the submission by the Head Office for 2010–2013. The data for 2014 is completed by the institute.

<sup>12</sup> Article 3.

<sup>13</sup> To be listed as the average of the sum of the full time equivalents (FTE) of the researchers of the given team in each year of the period under evaluation, i.e.  $\bar{k} = (\Sigma FTE_{2010} + \Sigma FTE_{2011} + \Sigma FTE_{2012} + \Sigma FTE_{2013} + \Sigma FTE_{2014}) : 5$ , given to two decimal places. Problematic or disputable cases will be resolved by the Board.

<sup>14</sup> 0.5 is to be rounded up.

to the average aggregate full time equivalent of the PhD-students in the team calculated analogously for the value  $k^{13}$ . The reported outputs must be submitted by 19 February 2015 and must meet the following requirements:

- a1) Each output must be assigned to precisely one panel (field) and one subfield. For presented outputs with authors from several teams or institutes of the CAS (see above), the teams within one institute or relevant institutes with each other must agree in advance upon the panel (field) and subfield the output is submitted to. Each output will be accompanied by a brief textual comment explaining why the given output of the team is considered significant and quality. This commentary must be submitted by 15 March 2015. (The share of the team and institute on the creation of the output will need to be characterised during Phase II of the evaluation.)
- a2) In exceptional cases, the author of the presented output will not have to be on the position of researcher (they may be, for instance, a graduate student who is employed by the given institute). Such outputs may be submitted based on an explanation from the director of the institute.
- a3) The submitted output must contain affiliation to the institute under evaluation.
- a4) The date of the publication of the output (publishing of an online-first version of an article, of a printed version of an article, publication of a book, grant of a patent, or of another output) must belong to the period under evaluation.
- a5) The reported output is accompanied by a subfield belonging to the panel and field within which the output is to be evaluated<sup>15</sup> (**Appendix 3.1**).
- a6) If the submitted output does not belong by its content to the field panel in which the team is registered, the field panel to which the output belongs is marked, listing also the relevant field and subfield. The rules concerning the assignment of the panels, fields and subfields are specified in **Appendix 3.1**.
- b) If the team submits fewer outputs than corresponding to item a), they will explain the reasons in the materials for Phase II of the evaluation (see paragraph 5 below).
- c) Bibliometric data will be processed for the individual outputs listed in Web of Science and Scopus of the types "Article", "Review", "Conference proceedings" (**Appendix 4.1**). The institutes will be invited to check them by 20 March 2015.
- d) For outputs included in the humanities and social-science field panels, it is possible to accompany each output with information about the most important scientific response, i.e. reviews and up to five most important quotations.
- e) Outputs of technical type (patents, implemented devices, technologies and such like), will be submitted in the form of a description of the output prepared for the purpose of this evaluation.
- f) The selection of all the outputs for evaluation will be implemented by means of an electronic interface by marking outputs registered earlier in the ASEP – database of the scientific outputs of the CAS. The outputs are submitted for evaluation by the director of the institute.
- g) The institutes will ensure access to the full texts of the submitted outputs by means of the ASEP database by 31 March 2015. If the inclusion of a monograph in the ASEP cannot be ensured, two of its copies must be sent to the Science Support Division within the same deadline. The Science Support Division will ensure their delivery to the Library, which will ensure sending to the evaluators abroad.

---

<sup>15</sup> Example: A team is registered for Panel 9 – Medical and Health Sciences. It contains several fields, further categorised into subfields. The information will be, for example, Panel 9 / Field 9.1 / Subfield 5. It means: Panel 9 – Medical and Health Sciences, Field 9.1 – Basic Medicine, Subfield 5 – Pharmacology & Pharmacy.

## 5) Requisites of the application for Phase II of the evaluation

Within Phase II of the evaluation, the institute submits information for each team individually and for the institute as a whole.

### Data for the institute as a whole

- a) All grant and programme projects supported from the public means from the national sources, the EU sources and foreign sources within the period under evaluation of which the institute is a recipient, or co-recipient (name, provider, investigation period, overall targeted funding to the project for the institute in the period under evaluation in thousands of CZK). Additional information may be listed in the data for the particular team.
- b) Research for practice (applied research and collaboration with the application sphere), contract research (contract name, ordering party, time period, revenues in thousands of CZK), collaborative research and technology transfer. Additional information may be listed in the data for the particular team.
- c) Summary data concerning the pedagogical activity of the institute.
- d) Data about activity in the outreach of research (courses and lectures for the public, outreach publications, instructional films, television and radio programmes, and such like).
- e) Publishing activity concerning scientific books and periodicals.
- f) Research services: library, database, collections and others.
- g) Administration of research infrastructure (brief description of the infrastructure, service portfolio, principles of access to the infrastructure, characterisation of the user community, data about utilisation including the ratio of external and internal users, characterisation of the results achieved based on its utilisation, involvement in international cooperation, development strategy). Research infrastructure means<sup>16</sup> a unique device or platform that provides the research community with resources and services for implementation of top research and development and is established for utilisation also by other research organisations and other users under pre-defined and transparent conditions.
- h) Information about the activity of the institute:
  - h1) Characterisation of the main research directions investigated at the institute. The maximum extent is 10 pages.
  - h2) Qualitative and quantitative description of the personal policy of the institute (age structure, qualification structure, personal structure from the viewpoint of international representation, description of the worker acquisition process, method of evaluation of the workers and teams, qualification growth).
  - h3) Strengths and weaknesses of the institute.
  - h4) Plan of the activity of the institute as a whole for 2015–2019.

### Data for the individual teams

- a) A report on the scientific activity of the team in the period under evaluation and the plan for 2015–2019, including characterisation of the main scientific results achieved by the team during the period under evaluation. The description of a result achieved in cooperation with other teams must clearly specify the team's share on its creation

---

<sup>16</sup> The definition of research infrastructure is based on IPn methodology for the evaluation of the research infrastructure, [http://www.msmt.cz/file/33846\\_1\\_1/](http://www.msmt.cz/file/33846_1_1/) page 4–5; the required description includes the main criteria of its assessment using IPn methodology.

- (i.e., the particular activity with which the team contributed to the result). The maximum extent is 10 pages.
- b) The number of all scientific outputs according to the individual types<sup>17</sup> during the period under evaluation (2010–2014). Pre-filling of the form will be enabled through the ASEP based on the list of all members of the individual teams provided by the institute.
  - c) If the team presents fewer outputs than determined by the rule listed in paragraph 4 (above), it will provide an explanation.
  - d) The list of all scientific outputs of the team during the period under evaluation marking the authors who were members of the team during the period under evaluation.
  - e) The list of all grant and programme projects supported from the public means (including the acquired financial means) from the national sources, the EU sources and international sources in the cases where the principal investigator, a co-investigator or the coordinator of the project for the institute is member of the given team. The order numbers of grant and programme projects listed under item a) in the section “Data for the institute as a whole” are to be listed.
  - f) Research for practice (applied research and collaboration with the application sphere), contractual research, collaborative research and technology transfer. The order numbers of the entries of contractual research listed under item b) in the section “Data for the institute as a whole” plus the specification of the team’s share on this research are to be listed.
  - g) Pedagogical activity of the members of the team (regular teaching at a university, guidance of PhD.-students – separately listing supervision and consultancy).
  - h) Participation of the members of the team in the activities for the scientific community (membership in scientific commissions – Czech Science Foundation and such like, scientific councils, editorial councils, etc.)

## **Article 5**

### **Principles of the Establishment and Operation of the Panels in Phase I of the Evaluation**

#### **1) Bodies involved in Phase I of the evaluation**

- Panels (a total of 13).
- Evaluators.
- Coordination Board (see Article 2).

#### **2) Establishment of the field panels for Phase I of the evaluation**

- a) The panel chairs and panel members will be appointed in the first step. The panel will consist of foreign researchers. The number of panel members will differ depending on the size and heterogeneity of the fields coming under the panel. They must be internationally renowned authorities with no conflict of interests (**Appendix 5.1**) concerning the institute of the CAS in the given main field. Subject to approval by the Academy Council, chairs and members of the panels will be appointed by the president of CAS.

---

<sup>17</sup> Articles in journals with impact factor, articles in other journals, professional books, chapters in professional books, contributions to proceedings, patents, applied results.

- b) The field panels will be provided with the list of the evaluators willing to participate in the evaluation of the outputs. Panel members will assign the individual outputs to the selected evaluators by means of an online information system (hereinafter “OIS”). The evaluators will evaluate them in accordance with the rules (**Appendix 5.2**).
- c) Prior to the beginning of the evaluation itself, all panel members including the panel chairs as well as the evaluators will confirm the absence of a conflict of interests in the OIS.
- d) The overview of the outputs under evaluation, the process of evaluation by the evaluators, the communication with the panels and the evaluators, etc. will be ensured by the OIS.
- e) A written description of what is and is not expected from the panel members and the evaluators, the estimated time required and the rules of determination of the reward will be available for the purposes of contacting candidates for panel members and evaluators (**Appendix 5.3**). The subsequent contacting and contracting of all panel members and evaluators will be technically ensured by the Science Support Division. The panel members and evaluators will register online (**Appendix 5.4**).
- f) The institutes will have an opportunity to express their objections to certain experts (the institutes have been sent a letter inviting them to list specific experts to be excluded from the evaluation along with a brief explanation – see **Appendix 5.5**).

### 3) Organisation of Phase I of the evaluation

#### a) Field panel and evaluators

The panel is led by the panel **chair**, who coordinates and monitors the work of the panel members and evaluators, but does not evaluate the outputs him or herself. The decisions are made by the panel in consensus if possible; the panel chair will decide in the event of a disagreement of the panel. The panel chair:

- Is responsible for providing information to the panel members and evaluators. For this purpose, the panel chair will be equipped with written instructions. He/she can also provide additional ad-hoc explanations either bilaterally, or for all members of the panel (FAQ section of the OIS – see below). The panel chair presents problematic issues to discussion by the Board, preferably including a proposal of the solution.
- Supervises the course of work of the panel members using the OIS:
  - Registers in the OIS, confirms that he/she has been informed about the rules (including the exclusion of a conflict of interests) and lists his/her area of expertise.
  - Monitors whether the panel members have distributed the outputs to the evaluators and urge them if need be.
  - If the classification of an output by the two evaluators differs by precisely one quality level (e.g. 1 vs 2, or 2 vs 3), the panel chair decides about the classification upon recommendation of the panel member relevant to the respective field.
  - If the classification of an output by the two evaluators differs by more than one quality level (e.g. 2 vs 4, or 1 vs 3), the panel member relevant to the respective field asks a third evaluator to provide an assessment. The panel chair will decide about the final classification upon recommendation of the panel member relevant to the respective field based on all three assessments, but also if the third assessment is impossible to procure for objective reasons.
  - If over the best effort two required assessments of the output are not provided during the Phase I of the evaluation (no assessment at all or one assessment only), panel chair will decide about the final classification of the output in question upon the recommendation of the panel member relevant to the respective field.

A **panel member** supervises the course of the work of the evaluators using the OIS:

- Registers in the OIS, confirms that he/she has been informed about the rules (including the exclusion of a conflict of interests) and lists his/her area of expertise.
- Within the framework of his/her field, distributes the individual outputs to the evaluators based on the evaluators' expertise; does not evaluate the outputs him/herself with exception of such cases when required number of assessments of the particular output is not provided (see below).
- Monitors the course of the work of the evaluators and urge them if need be.
- If the classification of an output by the two evaluators differs by precisely one quality level (e.g. 1 vs 2, or 2 vs 3), prepares a proposal of its final classification and presents it to the panel chair.
- If the classification of an output by the two evaluators differs by more than one quality level (e.g. 2 vs 4, or 1 vs 3), asks a third evaluator to provide an assessment. After the third assessment is prepared, but also if it is impossible to procure for objective reasons, prepares a proposal of the final classification of the output and present it to the panel chair.
- If over the best effort two required assessments of the output are not provided during the Phase I of the evaluation (no assessment at all or one assessment only), prepares a proposal of its final classification and presents it to the panel chair.

An **evaluator** evaluates the outputs and classifies them by quality levels (**Appendix 5.2**):

- Registers in the OIS, confirms that he/she has been informed about the rules and lists his/her area of expertise, according to which the panel will assign them outputs for evaluation.
- Confirms the acceptance of the outputs assigned for evaluation and the absence of a conflict of interests (**Appendix 5.1**) in the OIS, possibly refusing some (providing objective reasons). Such reasons may include either fundamentally different expertise, or a conflict of interests. They peruse the assigned outputs and classify each of them with a respective quality level (**Appendix 5.2**).
- Following the dispatching of his/her evaluation of the output, he/she can see the evaluation of the same output by the other evaluator in the OIS. If evaluation by a third evaluator is needed this evaluator does not see the evaluation by the previous evaluators prior to the conclusion of his/her own evaluation.

#### **b) Output evaluation procedure**

- The outputs contained in the applications (with the Digital Object Identifiers listed, if it exists) for a field panel are assigned to the evaluators by the panel members relevant to the respective field.
- Each output will be evaluated by 2 evaluators in such a way as to ensure the greatest possible correspondence between the expertise of the evaluator and the topical/methodical focus of the output (according to the fields and subfields).
- The assignment must not represent a conflict of interests as specified in the **Appendix 5.1**.
- If the evaluator refuses to evaluate an output on principle because it does not correspond to his/her expertise or does not react to the request for evaluation, the panel member relevant to the respective field assigns the output to another evaluator.

If the panel member relevant to the respective field does not find a suitable evaluator in the list, he/she proposes external ad hoc evaluator and assigns him/her the output for evaluation.

### **c) Technical background of Phase I of the evaluation**

- The OIS will provide services for the evaluation procedure. It will contain three basic information sections, concerning the outputs of research, the evaluators and the outcomes of evaluation of the outputs. The information about the outputs of research will be accessible to the institutes under evaluation, the panel chairs and panel members and the evaluators. The information about an evaluator will be accessible to the evaluator him or herself, the panel chair and panel members of the respective panel and the Board. During evaluation process, the information about the outcomes of evaluation of each individual output will be accessible only to the panel chair and panel members. Any access will be personal, based on a *user name* and *password*. The OIS will be backed up regularly.
- The OIS will provide the panel chair, the panel members and the evaluators with differentiated online access to the list of the outputs under evaluation and the related information (bibliometrics, citation response, etc. - **Appendix 4.1**). It contains a field for the evaluator's private notes, check boxes for the classification of the output by a quality level, a button for the confirmation of the absence of a conflict of interests, a button for definitive approval of the evaluation of the output (following the confirmation of the absence of a conflict of interests with the output under evaluation). Furthermore, the evaluator will be able to prepare basic overviews (sorting, filtering) of the outputs he/she has been assigned for evaluation and their classification on the quality level scale. Apart from the full texts of all outputs submitted to the field panel the OIS will enable the panel to monitor the course of evaluator registrations; to prepare their own notes concerning the expertise of the evaluators and such like; to assign the evaluators to the individual outputs; to send individual or mass e-mail announcements; to monitor the acceptance of output evaluation and the classification of the outputs by quality levels by the evaluators; to automatically urge the individual evaluators by e-mail; and, in the case of a conciliation procedure concerning an output and the outcome, to communicate with the evaluators in question.
- The panel will see the classification of the outputs by quality levels confirmed by the evaluators, and therefore the progress of their work. It may thus easily identify possible disagreements in the evaluation (signal function).

## **Article 6**

### **Principles of the Establishment and Work of the Commissions in Phase II of the Evaluation**

#### **1) Bodies involved in Phase II of the evaluation**

- Commissions.
- Coordination Board (see Article 2).

## 2) Establishment of the field commissions for Phase II of the evaluation

- a) The commissions for Phase II of the evaluation correspond to the 13 field panels for Phase I (see **Appendix 3.1**).
- b) A commission consists of the chair, the deputy chair and other members, whose number depends on the breadth of the field. Like in the case of the field panels, they will be internationally renowned authorities with no conflict of interests (**Appendix 5.1**). Subject to approval by the Academy Council, chairs, deputy chairs and commission members will be appointed by the president of CAS.
- c) The commissions will include researchers from abroad as well as from the Czech Republic (mostly from universities or working abroad). They will be important internationally acknowledged personages well acquainted with the functioning (financing and management) of similar institutes abroad or with the R&D environment in the Czech Republic. The official language will usually be English.
- d) The following persons participate in the work of the field commissions as observers in order to ensure the transparency and comparability of the evaluation of all institutes in Phase II:
  - representatives of the CAS, appointed by the President of the CAS;
  - representatives of the institute under evaluation appointed by the director of the given institute.

The observers – representatives of the CAS may participate in all the sessions of the commissions as well as in on-site visits to the institutes, but do not intervene in the formulation of the conclusions of Phase II of the evaluation. They may only comment on organisational affairs and on the abidance by the rules.

The observers – representatives of the institute under evaluation may participate in all sessions of the respective commissions at the institute except for the final one, at which the outcomes of the evaluation will be formulated. They do not intervene in the course of the evaluation, may answer questions of commission members and may present their objections about the course of the evaluation to the chair of the commission and the Board.

## 3) Operation of the field commissions in Phase II of the evaluation

The administrative support for the work of the field commissions and the preparation of the final reports will be provided by the Science Support Division.

Within Phase II of the evaluation, the institutes of the CAS and the scientific teams will be evaluated from the following points of view:

- a) the quality of the results and the share of the team(s) and of the institutes in achieving them (based on the assessment of the outputs in Phase I and the description of the importance of the results by their presenters). The field commission will take account of bibliometric data concerning the outputs in question;
- b) societal (social, economic and cultural) relevance;
  - educational activity (teaching, postgraduate student training);
  - research for practice (applied research and collaboration with the application sphere);
  - outreach and publishing activity;
  - services to research (libraries, databases, collections, infrastructure administration, etc.);
- c) involvement of students in research;

- d) position in both the international and national context;
  - scientific reputation and visibility on the international scale;
  - ability to attract foreign researchers;
  - position in the national context (comparison with other similarly focused institutions in the Czech Republic);
- e) vitality, sustainability and perspective;
  - financial aspects (structure of the resources, comparison with the outputs, effectiveness of research);
  - management (organisational structure, employee recruitment methods, career growth);
  - human resources (age structure, qualification structure, mobility);
  - grant and project activity;
- f) strategy and plans for the future.

**4) Phase II of the evaluation will include a visit to the institute** with the following programme:

- a) presentation of the activity (retrospective and prospective) of the individual teams;
- b) public presentation (retrospective and prospective) by the director of the institute
- c) meeting of the commission and the Board of the institute;
- d) meeting of the commission and the director of the institute;
- e) prospective visit to the laboratories and facilities of the institute.

Where it is useful, a meeting with the Supervisory Board of the institutes may be arranged within the framework of the visit to the institute.

The commission will carry out the evaluation in accordance with pre-defined rules (**Appendix 6.1**).

Prior to the final session of the commission, the observers – representing both the CAS and the institutes under evaluation – will provide a statement on whether the evaluation visit has taken place in accordance with the principles stipulated by this document. Should any of the observers have doubts about it, they will inform the Board in writing including their reasons, and the Board will decide whether or not the evaluation commission is to take these objections into consideration when formulating the final report.

The materials for the work of the field commissions in Phase II of the evaluation are described in detail in Article 4 (Requisites of the Application). Those that are crucial for the course of Phase II are emphasised here:

- a) A report on the results of the activity during the period under evaluation (Research Report), containing:
  - specification of the most important results in the period under evaluation;
  - in the case of the teams, detailed specification of the contribution of its members to the achievement of these results and of all the outputs evaluated in Phase I;
- b) The plan of research and other activity for the following period;
- c) The Results of Phase I of the evaluation (quality profiles of the team's outcomes);
- d) Bibliometric analysis (prepared by the Library) or the summary of the main scientific response to the work of the team or institute.

The OIS (see Article 5) will be used also during Phase II of the evaluation. The commissions will receive all relevant information about the teams and institutes they evaluate through the OIS. The institutes under evaluation, the chairs, deputy chairs and commission members and the chair and members of the Board will have access to this information. The chair, deputy chair and commission members have continuous access to current information concerning the conclusions of the evaluation of all individual teams and institutes for the given commission. The chair and members of the Board will have access to current information concerning the conclusions of the evaluation of all individual teams and institutes and all the final reports. The directors of the institutes will receive the final report (see Article 7) concerning their institute and individual teams through the OIS. Any access will be personal, based on a *user name* and *password*.

## **Article 7**

### **Final Report**

The outcome of Phase II of the evaluation and of the evaluation as a whole will have the form of final reports prepared by the respective field commissions.

The final reports for the institute as a whole and for the individual teams will contain the following information:

- a) verbal evaluation according to the points of view a)–f) specified in Article 6, paragraph 3);
- b) conclusion containing the commission's recommendation;
- c) statement from the observer, representative of the CAS, on the course of Phase II of the evaluation;
- d) statement from the director of the institute on the course of the evaluation and the final report. If the institute is of the opinion that the final report violates the principles stipulated by this document or that some facts are inaccurately or incorrectly interpreted in the final report, the director may ask the Board in his/her statement to the final report (to be submitted as of 22 January 2016) that it be reassessed by the commission. If the Board accepts the objection as justified, the commission will reassess its final report by 15 February 2016. The institute will subsequently have an opportunity to express their opinion on the final version of the final report (to be submitted as of 29 February 2016).

The chairs of the involved field commissions will hand over the final report to the President of the CAS through the Science Support Division. The final reports will have a unified form specified by **Appendix 7.1**.

#### **List of Appendices:**

- Appendix 3.1 – Fields of Science and Technology Categories
- Appendix 4.1 – Bibliometric Analysis
- Appendix 5.1 – Conflict of Interest
- Appendix 5.2 – Guide for Evaluators – Phase I
- Appendix 5.3 – Research Evaluation Exercise 2015: The Outline
- Appendix 5.4 – Evaluator Registration Form
- Appendix 5.5 – Letter – Identification of Specific Experts Excluded from the Evaluation
- Appendix 6.1 – Guide for Evaluators – Phase II
- Appendix 7.1 – Final Report
- Appendix 7.2 – Timetable

*The Czech version of this document was approved by the Academy Council of the CAS at its 22<sup>nd</sup> session held on 6 October 2014, and at its 23<sup>rd</sup> session held on 4 November 2014, and 24<sup>th</sup> session held on 2 December 2014, 25<sup>th</sup> session held on 20 January 2015, 26<sup>th</sup> session held on 17 February 2015 and 31<sup>st</sup> session held on 14 July 2015 (partial changes).*

# Evaluation of the Research and Professional Activity of the Institutes of the CAS for the period 2010–2014

## Appendix 3.1 – Fields of Science and Technology Categories

---

The list includes **5 main fields** containing a total of **27 fields** put together according to the OECD list “Revised field of science and technology (FOS) classification in the Frascati manual”, including narrower fields (the so-called **subfields**) belonging to the mentioned fields by content. The fields are divided into **13 panels** for the purposes of the evaluation.

- The OECD list contains 6 field groups with a total of 42 fields.
- For the purposes of the evaluation, the number of fields was reduced by the attachment of the fields that were little represented in the research activity of the Czech Academy of Sciences to fields related by content.
- No field was left out altogether, with the exception of the fields such as “Other sciences”.
- The fields were attached categories according to Journal Citation Reports (JCR) and Web of Science Category Terms (WoSCT).
- The WoSCT and JCR are identical, except for a few additional categories contained in WoSCT.<sup>1</sup>

### Table on page 2: List of the fields and their division into panels (listing the main field)

Column 1: main field number according to OECD (*main field 4 is missing, its fields are attached to 1.60*)

Column 2: field number according to OECD

Column 3: main field name and field names

Column 4: order number of the **panel**

### Tables from page 3: Fields and subfields

Column 1: subfield order number within the field (row = subfield)

Column 2: subfield name according to the OECD list

Column 3: empty

Column 4: names of the categories according to JCR or WoSCT<sup>2</sup>

**Inclusion of teams:** The Institutes (as those who submit the evaluation applications) will be numbered, as will be the teams within the framework of the Institute. In the application, the Institute will include each of its scientific teams in **exactly one panel (basic panel)** and in **exactly one field within the panel (basic field)**.

### Inclusion of outputs and results

- 1) The inclusion in the basic panel and the basic field is implicitly presumed for the individual outputs presented for evaluation.
- 2) The subfield must also be listed for each output or result.

---

<sup>1</sup> WoSCT

[http://images.webofknowledge.com/WOKRS512B4.1/help/WOS/hp\\_subject\\_category\\_terms\\_tasca.html](http://images.webofknowledge.com/WOKRS512B4.1/help/WOS/hp_subject_category_terms_tasca.html)

<sup>2</sup> If the categories according to JCR and WoSCT and the name of the subfield according to OECD correspond, they are listed in the same row. If a category according to JCR and WoSCT does not have a corresponding subfield in the OECD list or vice versa, the JCR and WoSCT category or the OECD subfield are listed in a separate row.

### List of the fields and their division into panels

MF <sup>3</sup>	FOS No.	Main Field/Field of Science and Technology (FOS)	PANEL
<b>1</b>		<b>Natural sciences</b>	
	1.1	Mathematics	<b>1</b>
	1.2	Computer and information sciences	<b>2</b>
	1.3	Physical sciences	<b>3</b>
	1.4	Chemical sciences	<b>4</b>
	1.5	Earth and related environmental sciences	<b>5</b>
		Biological sciences	
	1.6B	<i>Biochemistry and molecular cell biology, biophysics, virology, ...</i>	<b>6</b>
	1.6O	<i>Biol. sciences including biotechnology and agricultural sciences</i>	<b>7</b>
<b>2</b>		<b>Engineering and technology</b>	<b>8</b>
	2.2	Electrical engineering, electronic engineering, information engineering	
	2.1, 2.3	Mechanical and civil engineering	
	2.4	Chemical engineering	
	2.5	Materials engineering, materials science and nanotechnology	
	2.6	Metrology and diagnostic methods	
<b>3</b>		<b>Medical and health sciences</b>	<b>9</b>
	3.1	Basic medicine	
	3.2	Clinical medicine	
	3.3	Health sciences	
	3.4	Medical biotechnology and medical engineering	
<b>5</b>		<b>Social sciences</b>	<b>10</b>
	5.1	Psychology	
	5.2	Economics and business	
	5.4	Sociology	
	5.5	Law	
	5.6	Political science	
	5.7	Social and economic geography	

<sup>3</sup> MF = main field; except for 4 – agricultural sciences, which are attached to main field 1. The MF is not listed in the application.

<b>6</b>		<b>Humanities</b>	
	6.1	History and archaeology	<b>11</b>
	6.2	Languages and literature	<b>12</b>
		Humanities excluding 6.1 and 6.2	<b>13</b>
	6.3	Philosophy, ethics and religious studies	
	6.4	Arts (arts, history of arts, performing arts, music)	
	6.5	Other humanities	

## 1. Natural sciences

### 1.1 Mathematics

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Pure mathematics	
2		MATHEMATICS
3	Applied mathematics	MATHEMATICS, APPLIED
4	Statistics and probability <sup>4</sup>	STATISTICS & PROBABILITY
5		MATHEMATICS, INTERDISCIPLINARY APPL.
6		LOGIC

### 1.2 Computer and information sciences

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Computer sciences, information science and bioinformatics <sup>5</sup>	
2		COMP. SCI., ARTIFICIAL INTELLIG.
3		COMP. SCI., CYBERNETICS
4		COMP. SCI., INFORMAT. SYSTEMS
5		COMP. SCI., INTERDISC APPL.
6		COMP. SCI., THEORY & METHODS

### 1.3 Physical sciences

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Atomic, molecular and chemical physics (physics of atoms and molecules including collision, interaction with radiation, magnetic resonances, Mössbauer effect)	PHYSICS, ATOMIC, MOLECULAR & CHEMICAL

<sup>4</sup> This includes research on statistical methodologies, but excludes research on applied statistics which should be classified under the relevant field of application (e.g. Economics, Sociology, etc.).

<sup>5</sup> Hardware development to be 2.2, social aspects to be 5.8.

2	Condensed matter physics (including formerly solid state physics, supercond.)	PHYSICS, CONDENSED MATTER
3	Particles and field physics	PHYSICS, PARTICLES & FIELDS
4	Nuclear physics	PHYSICS, NUCLEAR NUCLEAR SCIENCE & TECHNOL.
5	Fluids and plasma physics (including surface physics)	PHYSICS, FLUIDS & PLASMAS
6	Optics (including laser optics and quantum optics)	OPTICS
7	Acoustics	ACOUSTICS
8	Astronomy (including astrophysics, space science)	ASTRONOMY & ASTROPHYSICS
9		CRYSTALLOGRAPHY
10		PHYSICS, APPLIED
11		PHYSICS, MATHEMATICAL
12		PHYSICS, MULTIDISCIPLINARY
13		SPECTROSCOPY

#### 1.4 Chemical sciences

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Organic chemistry	CHEMISTRY, ORGANIC
2	Inorganic and nuclear chemistry	CHEMISTRY, INORGANIC & NUCL.
3	Physical chemistry	CHEMISTRY, PHYSICAL
4	Polymer science	POLYMER SCIENCE
5	Electrochemistry (dry cells, batteries, fuel cells, corrosion metals, electrolysis)	ELECTROCHEMISTRY
6	Colloidochemistry	
7	Analytical chemistry	CHEMISTRY, ANALYTICAL
8		CHEMISTRY, APPLIED
9		CHEMISTRY, MULTIDISCIPLINARY

#### 1.5 Earth and related environmental sciences, environmental engineering

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Geosciences, multidisciplinary	GEOSCIENCES, MULTIDISCIPLIN
2	Mineralogy	MINERALOGY
3	Palaeontology	PALEONTOLOGY
4	Geochemistry and geophysics	GEOCHEMISTRY & GEOPHYSICS
5	Physical geography	GEOGRAPHY, PHYSICAL GEOGRAPHY
6	Geology	GEOLOGY
7	Volcanology	
8	Environmental sciences <sup>6</sup>	ENVIRONMENTAL SCIENCES

<sup>6</sup> Social aspects to be 5.7.

9	Meteorology and atmospheric sciences	METEOROLOGY & ATM. SCIENCES
10	Climatic research	
11	Oceanography	OCEANOGRAPHY
12	Hydrology	
13	Water resources	WATER RESOURCES
14	Environmental and geological engineering, geotechnics	ENGINEERING, ENVIRONMENTAL ENGINEERING, GEOLOGICAL
15	Petroleum engineering (fuels, oils)	ENGINEERING, PETROLEUM
16	Energy and fuels	ENERGY & FUELS
17	Remote sensing	REMOTE SENSING
18	Mining and mineral processing	MINING & MINERAL PROCESSING
19	Marine engineering, sea vessels	ENGINEERING, MARINE
20	Ocean engineering	ENGINEERING, OCEAN

**1.6B Biochemistry, molecular & cell biology, biophys., virology, reprod. and develop. biol.**

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Cell biology	CELL BIOLOGY
2	Microbiology	MICROBIOLOGY
3	Virology	VIROLOGY
4	Biochemistry and molecular biology (including chemical aspects of Medical chemistry)	BIOCHEMISTRY & MOL. BIOLOGY
5	Biochemical research methods	BICHOECHEMICAL RESEARCH METHODS
6	Biophysics	BIOPHYSICS
7	Genetics and heredity <sup>7</sup>	GENETICS & HEREDITY
8	Reproductive biology <sup>8</sup>	REPRODUCTIVE BIOLOGY
9	Developmental biology	DEVELOPMENTAL BIOLOGY

**1.6O Biological sciences including biotechnology and agricultural sciences**

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Mycology	MYCOLOGY
2	Plant sciences, botany	PLANT SCIENCES
3	Zoology	ZOOLOGY
4	Ornithology	ORNITHOLOGY
5	Entomology	ENTOMOLOGY
6	Behavioural sciences biology	BEHAVIORAL SCIENCES
7	Marine biology, freshwater biology	MARINE & FRESHWATER BIOL
8	Limnology	LIMNOLOGY
9	Ecology	ECOLOGY
10	Biodiversity conservation	BIODIVERSITY CONSERVATION
11	Biology (theoretical, mathematical,	BIOLOGY

<sup>7</sup> Medical genetics to be 3.

<sup>8</sup> Medical aspects to be 3.

	thermal, cryobiology, biological rhythm)	
12		MATHEMATICAL & COMPUTATIONAL BIOLOGY
13	Evolutionary biology	EVOLUTIONARY BIOLOGY
14	Other biological topics	
	<b>Biotechnology and industrial biology</b>	
15	Environmental biotechnology	
16	Bioremediation, diagnostic biotechnologies (DNA chips and biosensing devices) in environmental management	
17	Environmental biotechnology related ethics	
18	Industrial biotechnology	
19	Bioprocessing technologies (industrial processes relying on biological agents to drive the process), biocatalysis, fermentation industrial processes	
20	Bioproducts (products that are manufactured using biological material as feedstock)	
21	Biomaterials, bioplastics, biofuels, bioderived bulk and fine chemicals, bio-derived novel materials	MATERIALS SCIENCE, BIOMATERIALS BIOTECHNOLOGY & APPLIED MICROBIOLOGY
	<b>Agricultural sciences</b>	
22	Agriculture	AGRICULTURE, MULTIDISCIPLIN.
23	Forestry	FORESTRY
24	Fishery	FISHERIES
25	Soil science	SOIL SCIENCE
26	Horticulture, viticulture	HORTICULTURE
27	Agronomy, plant breeding and plant protection	AGRONOMY
28	Veterinary science	VETERINARY SCIENCES
29	Agricultural biotechnology and food biotechnology	
30	GM technology (crops and livestock), livestock cloning, marker assisted selection, diagnostics (DNA chips and biosensing devices for the early/accurate detection of diseases) biomass feedstock production technologies, biopharming; agricultural biotechnology related ethics;	
31	Agricultural engineering	AGRICULTURAL ENGINEERING
32	Food science & technology	FOOD SCIENCE & TECHNOLOGY
33	Animal & dairy science	AGRICULTURAL ECONOMICS POLICY
34		AGRICULTURAL DAIRY & ANIMAL SCIENCE

## 2. Engineering and technology

### 2.2 Electrical engineering, electronic engineering, information engineering

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Electrical and electronic engineering	ENGINEERING, ELECTRICAL & ELECTRONIC
2	Robotics and automatic control	ROBOTICS
3	Automation and control systems	AUTOMATION & CONTROL SYSTS.
4	Communication engineering and systems	
5	Telecommunications	TELECOMMUNICATIONS
6	Computer hardware and architecture	COMPUTER SCIENCE, HARDWARE & ARCHITECTURE
7		COMP. SCI. SOFTWARE ENGINEER.

### 2.1 and 2.3 Mechanical and civil engineering

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Mechanical engineering	ENGINEERING, MECHANICAL
2	Applied mechanics	MECHANICS
3	Thermodynamics	THERMODYNAMICS
4	Aerospace engineering	ENGINEERING, AEROSPACE
5	Nuclear and related engineering <sup>9</sup>	NUCLEAR SCIENCE & TECHNOL.
6	Audio engineering, reliability analysis	
7	Construction engineering	CONSTRUCTION & BUILDING TECHNOLOGY
8	Civil engineering	ENGINEERING, CIVIL
9	Architecture engineering	ARCHITECTURE
10	Transport engineering	TRANSPORTATION SCIENCES & TECHNOLOGY
11	Municipal and structural engineering	
12		ENGINEERING, MULTIDISCIPLIN.
13		ENGINEERING, INDUSTRIAL
14		ENGINEERING, MANUFACTURING

### 2.4 Chemical engineering

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Chemical engineering (plants, products)	ENGINEERING, CHEMICAL
2	Chemical process engineering	

<sup>9</sup> Nuclear physics to be 1.3.

## 2.5 Materials engineering, materials science and nanotechnology

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Materials engineering	
2	Ceramics	MATERIALS SCIENCE, CERAMICS
3	Coatings and films	MAT. SCIENCE, COATINGS & FILMS
4	Composites (including laminates, reinforced plastics, cermets, combined natural and synthetic fibre fabrics; filled composites)	MAT. SCIENCE, COMPOSITES
5	Paper and wood	MAT. SCIENCE, PAPER & WOOD
6	Textiles; including synthetic dyes, colours, fibres	MATERIALS SCIENCE, TEXTILES
7		MAT. SCI., CHARACTERIZATION & TESTING
8		MAT. SCI., MULTIDISCIPLINARY
9		METALLURGY & METALLURGICAL ENGINEERING
10	Nano-materials (production and properties)	
11	Nano-processes (applications on nano-scale)	
12		NANOSCIENCE & NANOTECHNOLOGY

## 2.6\* Metrology and diagnostic methods

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1		INSTRUMENTS & INSTRUMENTATION
2		MATERIALS SCIENCE, CHARACTERIZATION & TESTING
3		MICROSCOPY
4		OPTICS
5		IMAGING SCIENCE & PHOTOGRAPHIC TECHNOLOGY

## 3. Medical and Health sciences

### 3.1 Basic medicine

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Anatomy and morphology	ANATOMY & MORPHOLOGY
2	Human genetics	
3	Immunology	IMMUNOLOGY

4	Neurosciences (including psychophysiology)	NEUROSCIENCES
5	Pharmacology & pharmacy	PHARMACOLOGY & PHARMACY
6	Medicinal chemistry (including medical aspects of Medicinal chemistry)	CHEMISTRY, MEDICINAL
7	Toxicology	TOXICOLOGY
8	Physiology (including cytology)	PHYSIOLOGY
9	Pathology	PATHOLOGY
10		MEDICINE, RESEARCH & EXPERIMENTAL
11		NEUROIMAGING

### 3.2 Clinical medicine

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Andrology	ANDROLOGY
2	Obstetrics and gynaecology	OBSTETRICS AND GYNAECOLOGY
3	Paediatrics	PEADIATRICS
4	Cardiac and cardiovascular systems	CARDIAC & CARDIOVASCULAR SYSTEMS
5	Peripheral vascular disease	PERIPHERAL VASCULAR DISEASE
6	Haematology	HEMATOLOGY
7	Respiratory systems	RESPIRATORY SYSTEM
8	Critical care medicine and emergency medicine	CRITICAL CARE MEDICINE EMERGENCY MEDICINE
9	Anaesthesiology	ANAESTESIOLOGY
10	Orthopaedics	ORTHOPAEDICS
11	Surgery	SURGERY
12	Radiology, nuclear medicine and medical imaging	RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
13	Transplantation	TRANSPLANTATION
14	Dentistry, oral surgery and medicine	DENTISTRY, ORAL SURGERY & MEDICINE
15	Dermatology and venereal diseases	DERMATOLOGY
16	Allergy	ALLERGY
17	Rheumatology	RHEUMATOLOGY
18	Endocrinology and metabolism (including diabetes, hormones)	ENDOCRINOLOGY & METABOLISM
19	Gastroenterology and hepatology	GASTROENTEROLOGY & HEPATOLOGY
20	Urology and nephrology	UROLOGY & NEPHROLOGY
21	Oncology	ONCOLOGY
22	Ophthalmology	OPHTHALMOLOGY
23	Otorhinolaryngology	OTORHINOLARYNGOLOGY
24	Psychiatry	PSYCHIATRY PSYCHIATRY
25	Clinical neurology	CLINICAL NEUROLOGY
26	Geriatrics and gerontology	GERIATRICS AND GERONTOLOGY GERONTOLOGY

27	General and internal medicine	MEDICINE , GENERAL & INTERNAL
28	Other clinical medicine subjects	
29	Integrative and complementary medicine (alternative practical systems)	INTEGRATIVE & COMPLEMENTARY MEDICINE
30		AUDIOLOGY SPEECH & LANGUAGE PATHOLOGY

### 3.3 Health sciences

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Health care sciences and services (including hospital administration, health care financing)	HEALTH CARE SCIENCES & SERVICES
2	Health policy and services	HEALTH POLICY & SERVICES
3	Rehabilitation	REHABILITATION REHABILITATION
4	Nursing	NURSING NURSING
5	Nutrition, dietetics	NUTRITION & DIETETICS
6	Public and environmental health Occupational health	PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH
7	Tropical medicine	TROPICAL MEDICINE
8	Parasitology	PARASITOLOGY
9	Infectious diseases	INFECTIOUS DISEASES
10	Epidemiology	
11	Sport and fitness sciences	SPORT SCIENCES
		HOSPITALITY LEISURE & TOURISM
12	Social biomedical sciences (includes family planning, sexual health, psycho-oncology, political and social effects of biomedical research)	
13	Medical ethics	MEDICAL ETHICS
14	Substance abuse	SUBSTANCE ABUSE
15		MEDICINE, LEGAL
16		PSYCHOLOGY
17		PRIMARY HEALTH CARE
18		ERGONOMICS

### 3.4 Medical biotechnology and medical engineering

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Health-related biotechnology	
2	Technologies involving the manipulation of cells, tissues, organs or the whole organism (assisted	

	reproduction)	
3	Technologies involving identifying the functioning of DNA, proteins and enzymes and how they influence the onset of disease and maintenance of well-being (gene-based diagnostics and therapeutic interventions (pharmacogenomics, gene-based therapeutics)	
4	Biomaterials (as related to medical implants, devices, sensors)	
5	Medical biotechnology related-etics	
6		CELL & TISSUE ENGINEERING
7	Medical engineering	ENGINEERING, BIOMEDICAL
8	Medical laboratory technology (including laboratory samples analysis; diagnostic technologies)	MEDICAL LABORATORY TECHNOLOGY MEDICAL INFORMATICS

#### 4. Agricultural sciences (included in 1.60)

#### 5. Social sciences

##### 5.1 Psychology

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Psychology (including human-machine relations)	PSYCHOLOGY
2	Psychology, special (including therapy for learning, speech, hearing, visual and other physical and mental disabilities)	
3		PSYCHOLOGY, APPLIED
4		PSYCHOLOGY, BIOLOGICAL
5		PSYCHOLOGY, CLINICAL
6		PSYCHOLOGY, DEVELOPMENTAL
7		PSYCHOLOGY, EDUCATIONAL
8		PSYCHOLOGY, EXPERIMENTAL
9		PSYCHOLOGY, MATHEMATICAL
10		PSYCHOLOGY, MULTIDISCIPLIN.
11		PSYCHOLOGY, PSYCHOANALYSIS
12		PSYCHOLOGY, SOCIAL
13		PSYCHIATRY

##### 5.2 Economics and business

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Economics, econometrics	ECONOMICS

2	Industrial relations	INDUSTRIAL RELATIONS & LABOR
3	Business and management	MANAGEMENT BUSINESS BUSINESS, FINANCE
4		OPERATIONS RESEARCH & MANAGEMENT

#### **5.4 Sociology**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Sociology	SOCIOLOGY
2	Demography	DEMOGRAPHY
3	Anthropology	ANTHROPOLOGY
4	Social topics (Women's and gender studies; Social issues; Family studies, Social work)	WOMEN'S AND GENDER STUDIES SOCIAL ISSUES FAMILY STUDIES SOCIAL WORK
5	Education	EDUCATION & EDUCATIONAL RESEARCH EDUCATION, SCIENTIFIC DISCIPL. EDUCATION, SPECIAL
6		SOCIAL SCIENCES, BIOMEDICAL
7		SOCIAL SCIENCES, INTERDISCIPLINARY
8		SOCIAL SCIENCES, MATHEMATICAL METHODS
9		PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH

#### **5.5 Law**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Law, criminology, penology	LAW CRIMINOLOGY & PENOLOGY

#### **5.6 Political science**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Political science	POLITICAL SCIENCE
2	Public administration	PUBLIC ADMINISTRATION
3	Organisation theory	
4		INTERNATIONAL RELATIONS

### 5.7 Social and economic geography

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Environmental sciences (social aspects)	ENVIRONMENTAL STUDIES
2	Cultural and economic geography	
3	Urban studies (planning and development)	URBAN STUDIES PLANNING & DEVELOPMENT
4	Transport planning and social aspects of transport	
5		AREA STUDIES
6		CULTURAL STUDIES
7		TRANSPORTATION SCIENCE & TECHNOLOGY
8		TRANSPORTATION

## 6. Humanities

### 6.1 History and archaeology

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	History <sup>10</sup>	HISTORY
2	Archaeology	ARCHAEOLOGY
3		MEDIEVAL & RENAISSANCE STUDIES

### 6.2 Languages and literature

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	General language studies	LANGUAGE & LINGUISTICS
2	Specific languages	
3	General literature studies	LITERATURE REVIEWS LITERATURE
4	Literary theory	LITERARY THEORY & CRITICISM
5	Specific literatures <sup>11</sup>	SPECIFIC LITERATURES
6	Linguistics	LINGUISTICS
7		POETRY

<sup>10</sup> History of science and technology to be 6.3, history of specific sciences to be under the respective headings

<sup>11</sup> Includes all specific literatures (e.g. Czech literature, Asian literature, etc.).

## **Humanities excluding 6.1 and 6.2**

### **6.3 Philosophy, ethics and religion**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Philosophy	PHILOSOPHY
2	History and philosophy of science and technology	HISTORY & PHILOSOPHY OF SCIENCE
3	Ethics <sup>12</sup>	ETHICS
4	Theology	
5	Religious studies	RELIGIOUS STUDIES
6		HISTORY OF SOCIAL SCIENCES
7		LOGIC

### **6.4 Arts (arts, history of arts, performing arts, music)**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Arts, art history	ART
2	Architectural design	ARCHITECTURE
3	Performing arts studies (musicology, theater science, dramaturgy)	THEATER MUSIC
4	Folklore studies	FOLKLORE
5	Studies on film, radio and television	FILM, RADIO, TELEVISION
6	Media and communications	COMMUNICATION

### **6.5 Other humanities**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Ethnology	
2		ASIAN STUDIES
3		HUMANITIES, MULTIDISCIPLIN.
4		INFORMATION SCIENCE & LIBRARY SCIENCE
5		CLASSICS
6		DANCE

<sup>12</sup> Except for ethics related to specific subfields.

# Evaluation of the Research and Professional Activity of the Institutes of the CAS for the period 2010–2014

## Appendix 4.1 – Bibliometric Analysis

---

The evaluation of the Institutes of the CAS is based on international, informed peer-review, which means that, if possible, all the materials that may provide necessary information about the quality of the outputs and the overall information about the teams and Institutes are to be attached to the evaluation, in both Phase I and Phase II of the evaluation. The materials include basic information about the outputs, bibliometric data in tabular or graphic form (in the case of social sciences and humanities, the materials will include or consist exclusively of a list of reviews and responses) and further data about the structure and activity of the teams and Institutes. As regards bibliometrics, the evaluators in Phase I will have at their disposal a table with detailed information about each output to be evaluated, including bibliometric data acquired by comparison on the international scale. In Phase II, this data will be enriched by the bibliometrics of all outputs of the team in the period under evaluation, including those that were not presented for evaluation in Phase I, and for a bibliometric analysis on the national scale. Detailed analysis of the individual outputs will be available to the panels. In order to simplify their work, they will also have aggregated summaries at their disposal, which will enable for example the comparison of the teams within the framework of the Institutes, of the disciplines and suchlike. It needs to be emphasised – and the evaluators will be instructed in this sense – that all bibliometric materials serve the evaluators only as a set of complementary information, which the evaluator or the panel will use at their discretion. The bibliometric tables will be made accessible in advance to the relevant Institute for checking.

### Bibliometrics of Phase I of the evaluation of the CAS

The material for the evaluation will be prepared by each team under evaluation in the form of an adjusted table generated from the ASEP, in which the outputs (publications, books, patents and such like) presented for evaluation in Phase I (see the document “Basic Principles of the Evaluation of the Research and Professional Activities of the Institutes of the CAS for 2010-2014”) are marked. The Institute uses these proposals as their starting point when creating the resulting set of outputs presented for evaluation in Phase I. The materials for the whole CAS will be transformed into a summary table (see Evaluation of the Czech Academy of Sciences 2010–2014 – see Table 1 below). The table contains two levels. The first level of detail, visible for the evaluators at first glance, will contain the main information (see XLS list **1st\_level**) in the line form. The evaluator can display the second level in a new minimised window (the main window will remain open) by clicking a linked item. The details are listed in **2nd\_level**. The substance of an item is explained either in the form of a note directly in the small XLS window (upon hovering over it with the mouse), or in the LEGEND tab. The heading of the table contains the name of the Institute and the number of the teams and researchers under evaluation. Column 1 contains the team’s order number within the framework of the Institute, column 2 the team’s internal ID within the Institute. Column 3 contains the name and surname of the researcher whose contribution to the output included in the evaluation is the most important (usually a member of the team) and column 4 the

number of co-authors and information about the composition of the team (the number of researchers from the given Institute and the number of authors from abroad, separated by a slash, are listed in parentheses). The second level (2nd\_level) provides information about co-authors (the number of co-authors from the same group, Institute and from abroad) and a corresponding author.

**Tab. 1. Evaluation of The Czech Academy of Sciences (2010–2014)**

#33 BFU Institute of Biophysics										2 teams / 10 scientists		JOURNAL QUANTILES		CITATIONS			
Team	ID	AUTHOR	#CO-AUTH	TITLE	SOURC	SUBJECT CATEGORIES	TYPE	YEAR	ACCESSION NUMBER	AIS	SJR	Times cited	Quartile	% from Top50	% from Top25		
1	2385	NOVAK, Jiri	3(2/1)	Mechanisms of protective immunity against MHC class 1-positive and MHC class 1-deficient HPV 16-associated tumours	EXPERIMENTAL HEMATOLOGY	HEMATOLOGY; MEDICINE, RESEARCH & EXPERIMENTAL	ARTICLE	2011	WOS:000330812700048	1	1*	54	1*	66%	28%		
1	2385	NOVAK, Jiri	7(1/0)	The current perspective on tick-borne encephalitis awareness and prevention in six Central and Eastern European countries: Report from a	JOURNAL OF MOLECULAR MEDICINE	CELL & TISSUE ENGINEERING;	ARTICLE	2014	WOS:000330610300007	2	2	n.a.	n.r.	n.r.	n.r.		
1	2385	NOVAK, Jiri	5(0/0)	Diagnosis of Niemann-Pick type C (NPC) - Decisions at the cell level. Pathologist's report	JOURNAL OF TRANSLATIONAL MEDICINE	MEDICINE, RESEARCH & EXPERIMENTAL	ARTICLE	2011	WOS:000330570000107	1	1	15	2	55%	33%		
1	2385	NOVAK, Jiri	1	Perpetum mobile	CZECH PATENT OFFICE	n.a.	PATANT	2009	-	-	-	-	-	-	-		
1	235	POKL, Pavel	3(2/2)	Determination of metallothioneins and alpha-methylacyl-CoA racemase in patients with prostate carcinoma	ASIAN BIOMEDICINE	MEDICINE, RESEARCH & EXPERIMENTAL	ARTICLE	2011	WOS:000330142400038	1	1	32	2	58%	25%		
1	235	POKL, Pavel	2(1/0)	Determination of metallothioneins and alpha-methylacyl-CoA racemase in patients with prostate carcinoma	BOSNIAN JOURNAL OF BASIC MEDICAL SCIENCES	MEDICINE, RESEARCH & EXPERIMENTAL	ARTICLE	2014	n.a.	n.a.	3	3	n.a.	n.a.	n.a.		
1	235	POKL, Pavel	3(2/1)	Factors Associated with Multidrug-resistant Tuberculosis: Comparison of Patients Born Inside and Outside of the Czech Republic	BIOMEDICAL PAPERS-OLOMOUČ	MEDICINE, RESEARCH & EXPERIMENTAL	REVIEW	2011	WOS:000329539900012	3	2	16	2	10%	0%		
1	235	POKL, Pavel	1	Defining the critical hurdles in cancer immunotherapy	Palgrave		BOOK	2011	WOS:000329539900020	-	-	-	-	-	-		
2	14	KLESL, Felix	1	Basal and induced granulopoiesis in outbred, F-1 hybrid and inbred mice: can inbreeding depression influence the experimental practice?	JOURNAL OF EXPERIMENTAL MEDICINE	MEDICINE, RESEARCH & EXPERIMENTAL	ARTICLE	2011	WOS:000328658600023	1*	1*	34	2	78%	46%		
2	14	KLESL, Felix	2(1/0)	Cellular lipid alterations during the colon adenoma-carcinoma sequence and the sensitivity to dietary fatty acids	INTERNATIONAL JOURNAL OF MOLECULAR MEDICINE	MEDICINE, RESEARCH & EXPERIMENTAL	ARTICLE	2010	WOS:000330339700014	2	2	29	2	62%	25%		
2	14	KLESL, Felix	55(54/45)	Clinical Aspects of Sepsis	SEPSIS	MEDICINE, RESEARCH & EXPERIMENTAL	ARTICLE	2011	WOS:000328326800012	4	4	2	3 - 4.	0%	0%		
2	14	KLESL, Felix	1	Square root calculator	n.a.		SOFTWARE	2012	-	-	-	-	-	-	-		

Column 5 lists the name of the output and the second level contains a summary and a link to the PDF version of the output. Column 6 contains the full name of the source (journal), which must be in accordance with the names of the sources in WoS. The second level contains information about the source (such as a link to WoS information about the journal). Column 7 lists the discipline (Subject Category according to JCR) of the given output, determined by the author him or herself, but as one of the categories listed for this output by WoS. Column 8 lists the type of the output (article, review, proceedings paper, book, patent, software ...), column 9 the year of publication. The last column, No. 10, contains the number assigned to the output in WoS, the so-called accession number (AN). This number, unambiguously defining the outputs located in WoS, will serve for further bibliometric analysis (located to the right from AN).

Journal Quartiles (columns No. 11 and 12) contain the information about the quality of the journal – the number of the quartile in which the journal is in the list sorted for the particular discipline by JCR according to AIS (SJR). If the journal is included in the first decile (among the 10 % journals with the highest AIS or SJR values), an asterisk is attached to the numeral 1; if the journal has no AIS (SJR) value assigned, the corresponding line contains “n.a.”. The AIS (SJR) value will be downloaded from the JCR and SCOPUS databases some time ahead of the evaluation for the individual disciplines, and the value of the quartiles and the top decile for the individual journals will be calculated. (Figure 1 shows an example for the discipline “Acoustics”.)

If the journal is included in more disciplines, the average of the individual quartiles will be calculated, rounded to the nearest whole number (the value of 1.5 is to be rounded down); the same will apply to the top decile. The full names will be assigned to the shortened names of the journals; special symbols (“&” or “-”) will not be used in the names of the journals; these symbols will be replaced by null characters (in accordance with the convention used by WoS). The same form of journals names therefore needs to be used also in column 6 of the table.

Column 13 lists the number of citations – this value will be read from WoS as of the day of carrying out the analysis according to AN; if the output has no AN, this value needs to be supplied. Column 14 evaluates the number of citations and lists the quartile in which the output placed according to the number of citations as of the day of the analysis. A list sorted according to the number of citations will be created for the given year of publication, discipline and type of publication, and divided into quartiles. The quartile to which the output belongs will be determined according to the number of citations. An asterisk will be attached to the numeral 1 for the highly cited outputs belonging to the top decile of the list.

The critical values of the number of citations for the individual quartiles and the top decile of a particular discipline will be downloaded from WoS (Advanced Search – typing the discipline, year, and type of publication, determining the order numbers that divide the quartiles from the number of publications in the list sorted according to the number of citations and finding the number of citations (similarly for decile)). Figure No. 2 shows an example of a downloaded table. According to this table, the quartile (decile) is assigned to a value of the number of citations from column 13 of the Bibliometric Table (Times cited).

**Figure No. 1.** Journals of the Acoustics discipline sorted according to AIS. The quartiles and the top decile are assigned to the journals.

JOURNAL QUARTILES (1. DECILE) for AIS

JCR Year and Edition: 2012 Science Subject Category: ACOUSTICS Abbreviated Journal Title	Article Influence Score AIS	Quartile			Decile	RESULT
ULTRASOUND OBST GYN	0.944	1	0	1	1	1*
PHONETICA	0.899	1	0	1	1	1*
WAVE MOTION	0.865	1	0	1	1	1*
ULTRASOUND MED BIOL	0.742	1	0	1	0	1
ULTRASON SONOCHEM	0.729	1	0	1	0	1
J SOUND VIB	0.697	1	0	1	0	1
SPEECH COMMUN	0.658	1	0	1	0	1
ULTRASONICS	0.637	2	0	2	0	2
IEEE T AUDIO SPEECH	0.628	2	0	2	0	2
J ACOUST SOC AM	0.583	2	0	2	0	2
IEEE T ULTRASON FERR	0.513	2	0	2	0	2
J VIB ACOUST	0.512	2	0	2	0	2
APPL ACOUST	0.471	2	0	3	0	3
J VIB CONTROL	0.451	2	0	3	0	3
ULTRASCHALL MED	0.434	3	0	3	0	3
ULTRASONIC IMAGING	0.405	3	0	3	0	3
J COMPUT ACOUST	0.387	3	0	3	0	3
J ULTRAS MED	0.379	3	0	3	0	3
ACTA ACUST UNITED AC	0.36	3	0	3	0	3
J AUDIO ENG SOC	0.312	3	0	4	0	4
J CLIN ULTRASOUND	0.253	3	0	4	0	4
EURASIP J AUDIO SPEE	0.228	4	0	4	0	4
SHOCK VIB	0.196	4	0	4	0	4
NOISE CONTROL ENG J	0.141	4	0	4	0	4
SOUND VIB	0.121	4	0	4	0	4
ACOUST PHYS+	0.112	4	0	4	0	4
ACOUST AUST	0.095	4	0	4	0	4
ARCH ACOUST	0.088	4	0	4	0	4
J LOW FREQ NOISE V A	0.068	0	4	4	0	4
INT J ACOUST VIB		0	0	0	0	0
INT J AEROACOUST		0	0	0	0	0

JOURNALS:	N = 29
	N/4 = 7
	N/10=3

**Figure No. 2.** The critical values of the number of citations for the top decile and the quartiles are listed for the given discipline, year of publication of the output and type of the output. The number of publications in the given discipline is listed in column 4.

NUMBER OF CITATIONS - QUARTILE (1. DECILE)

SUBJECT CATEGORY	YEAR	TYPE	PUBLICATIONS	1.DECILE LOWER LIMIT	1. QUARTILE LOWER LIMIT	2.QUARTILE LOWER LIMIT	3-4. QUARTILE UPPER LIMIT
ACOUSTICS	2010	article	3901	13	7	3	<3
AGRICULTURAL	2010	article	1003	7	3	1	<1
AGRICULTURAL	2010	article	2917	25	14	7	<7
AGRICULTURE DAIRY	2010	article	6423	10	5	2	<2
AGRICULTURE	2010	article	7272	12	6	2	<2
AGRONOMY	2010	article	7963	11	6	2	<2
ALLERGY	2010	article	1981	27	13	6	<6
ANATOMY &	2010	article	1874	11	6	3	<3
ANDROLOGY	2010	article	428	16	8	4	<4
ANESTHESIOLOGY	2010	article	3646	18	10	4	<4
ASTRONOMY &	2010	article	16301	31	17	8	<8
AUDIOLOGY &	2010	article	1882	13	8	4	<4
AUTOMATION &	2010	article	7363	15	7	3	<3
BEHAVIORAL	2010	article	5349	19	12	6	<6
BIOCHEMICAL	2010	article	15924	21	12	6	<6
BIOCHEMISTRY & MOLECULAR BIOLOG	2010	article	49313	25	14	7	<7
BIODIVERSITY	2010	article	4141	18	10	4	<4
BIOLOGY	2010	article	93598	23	13	6	<6
BIOPHYSICS	2010	article	11482	21	12	6	<6
BIOTECHNOLOGY &	2010	article	24492	20	11	5	<5
CARDIAC &	2010	article	16591	24	12	5	<5
CELL & TISSUE	2010	article	1821	35	18	10	<10
CELL BIOLOGY	2010	article	21394	36	18	9	<9
CHEMISTRY	2010	article	17722	20	12	6	<6
CHEMISTRY APPLIED	2010	article	19683	27	13	6	<6
CHEMISTRY	2010	article	12389	17	10	5	<5
CHEMISTRY	2010	article	11649	18	11	6	<6
CHEMISTRY	2010	article	55017	34	17	7	<7
CHEMISTRY ORGANIC	2010	article	19532	21	12	6	<6
CHEMISTRY	2011	article	44723	28	15	7	<7
CLINICAL	2012	article	22264	20	11	5	<5

The quality of citations is evaluated in columns 15 and 16. The list of citations is found and analysed according to AN, determining the number of citations located in quality journals (from the upper half of the list with the highest AIS values) and in top ones (the top quartile of the journals with the highest AIS). Figure No. 3 shows an example of the analysis.

**Figure No. 3.** Quality of citations (the percentage of the citations in journals from TOP50 and TOP25). The figure shows the list of the names of the journals in which the evaluated output was cited. Column 2 lists the number of citations in the given journal. Column 3 states the

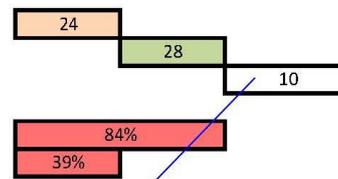
quartile in which the journal placed during the journal quality analysis (as explained above). The following columns list the numbers of citations in the journals from the individual quartiles and below the sums of these numbers of citations. We can see that this work was cited 62 times, out of which 84 % of the citations were in the upper half of better journals and 39 % in the top quartile of the best journals. The quality of citations is therefore very good (only 10 citations out of 62 were in “second-rate” journals).

QUALITY OF CITATIONS (% FROM TOP50 AND % FROM TOP25)

Source Titles	Times cited	Journal Quartile	Times cited in journals from		
			1. quartile	2. quartile	3-4. quartile
ACTA ACUSTICA UNITED WITH ACUSTICA	2	2	0	2	0
ARCHIVES OF ACOUSTICS	3	3	0	0	3
IEEE TRANSACTIONS ON AUDIO SPEECH AND LANG	5	2	0	5	0
IEEE TRANSACTIONS ON ULTRASONICS FERROELECT	3	2	0	3	0
JOURNAL OF CLINICAL ULTRASOUND	1	3	0	0	1
JOURNAL OF COMPUTATIONAL ACOUSTICS	3	4	0	0	3
JOURNAL OF SOUND AND VIBRATION	2	1	2	0	0
JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERIC	7	2	0	7	0
JOURNAL OF ULTRASOUND IN MEDICINE	2	3	0	0	2
NEOPLASMA	1	4	0	0	1
SPEECH COMMUNICATION	1	2	0	1	0
ULTRASCHALL IN DER MEDIZIN	7	2	0	7	0
ULTRASONICS	2	1	2	0	0
ULTRASONICS SONOCHEMISTRY	1	1	1	0	0
ULTRASOUND IN MEDICINE AND BIOLOGY	3	2	0	3	0
ULTRASOUND IN OBSTETRICS GYNECOLOGY	19	1	19	0	0

Results:

Times cited	62
Times cited in journals from 1. quartile	
Times cited in journals from 2. quartile	
Times cited in journals from 3-4. quartile	
% from TOP50	
% from TOP25	



The values of 84 % and 39 % are copied to columns 15 and 16 of the Bibliometric Table (at the end of the text).

### Bibliometrics for Phase II of the evaluation of CAS

Phase I will evaluate the quality of the selected most important outputs of the individual teams and Institutes (hereinafter labelled “Evaluated”) by means of peer-review, resulting in the **Quality Profile** of the outputs of each team. These profiles will become important information for Phase II of the evaluation. Another material will have the form of bibliometric information providing the overview of all outputs of the team during the period under evaluation included in WoS, not only of those presented for evaluation in Phase I (the outputs will be labelled Evaluated and “Not Evaluated” – meaning during Phase I of the evaluation).

As the source information is very extensive, the panels of Phase II will receive the information in a suitably, systematically and transparently aggregated form of graphs and tables (see the description below). In case of need, however, detailed information in the format of the bibliographic table from Phase I of the evaluation containing all the outputs during the period under evaluation will be available to be searched.

## Aggregated information on the team level

(one A4 sheet per team – see the following figure)

**Heading:** It contains the identification data of the Institute and the team, the overall numbers of outputs and the numbers of outputs evaluated in Phase I (*Evaluated*).

**Outcomes of the evaluation of Phase I** They are listed in the table *Quality Groups of Outputs and Results* and in the graph *Quality Profile*. The numbers of outputs in the individual quality groups are listed there.

## Bibliometric overview of all outputs

The left graph, *Quality of Outputs by Journals*, shows the quality of the journals in which the team published. It lists the numbers of outputs in the journals from the top decile (1\*) and in the individual quartiles 1, 2, 3, 4.<sup>1</sup> The data is listed both for the outputs evaluated in Phase I (red) and for all other outputs of the given team listed in the ASEP (green). The sum for all the outputs is therefore represented by the overall height of the column, and can be calculated simply by adding up the numbers in the lower and upper part of the bar. The graph thus illustrates the performance (the numbers of citations), the focus of the outputs towards the renown (citation rate) of the journals as well as the difference between the evaluated and non-evaluated outputs. The indicators of productivity (the numbers in relation to the number of the team members or the costs) will not be listed, because they might be very misleading. The scientific productivity of the team must be assessed professionally by the panel, taking into account apart from bibliometrics also the specifics of the discipline, the background of the team, the time of its existence and composition, etc.

The right graph, *Quality of Outputs by Intensity of Citations*, shows the quality of the citations of the team's outputs. Once again, it is the absolute numbers of outputs shown separately for the outputs evaluated (red) and non-evaluated (blue) during Phase I. The top decile (1\*) and the individual quartiles are listed again.<sup>2</sup> The data documents how many outputs were cited above and below average compared to the outputs of the same type and year of publication in the same discipline of WoS.<sup>3</sup> The citation analysis is carried out only for the outputs from 2010–2012, because the citations of the outputs from the last two years may be subject to high noise.

The left graph *Quality of Outputs by Citation Sources* shows the ratios of citations from journals belonging to the first quartile (TOP25) and to the first and second quartiles (TOP50) as a fraction of the overall number of citations of the team's outputs.<sup>4</sup> Once again, it is listed

---

<sup>1</sup> Evaluated according to the journal's AIS for the individual disciplines of WoS (for journals listed in several disciplines, the average value of the quartile across these disciplines was calculated and rounded to a whole number). The most quality journals (assessed according to AIS) are situated to the left (1\* means the first decile, i.e. that the journal is among the top 10 % journals sorted according to AIS).

<sup>2</sup> The quartiles are determined from the list of outputs sorted according to the number of citations for the given discipline in WoS, the year and the type. The quartiles 3 and 4 are combined because the numbers of citations are very low there (and, on the contrary, the number of outputs in this category may be significant).

<sup>3</sup> The analysis was carried out by the procedure listed in the description of column 14 of the summary table of Phase I of the evaluation.

<sup>4</sup> The citations were divided into four categories: citations (a) of publications evaluated in Phase I and (b) others; citations (a1, b1) in journals from the top quartile (TOP25) and citations (a2, b2) from the remaining three quartiles. The categories a1 and b1 are normed against the overall sum of the citations ( $s=a1+a2+b1+b2$ ) and listed in the graphs ( $a1/s$  red,  $b1/s$  yellow);  $(a1+b1)/s$  is therefore the overall height of the bar,

separately for the outputs evaluated in Phase I (red). The rightmost column shows the fraction of the outputs that were not cited at all in the given period (only outputs from 2010–2012), which is a very frequently listed bibliometric indicator.<sup>5</sup>

The table ***Field Structure of Outputs*** lists the numbers of outputs divided according to WoS disciplines. This information is important for the identification of the disciplines in which the team dominantly publishes. It enables the identification of similarly (and differently) focused teams and the implied suitability (unsuitability) of mutual comparison of bibliometric teams.

---

representing the overall number of citations in TOP25 (i.e., in quality journals). Similarly for TOP50. The quartiles of the journals were again determined according to the journal's AIS within the framework of the WoS discipline.

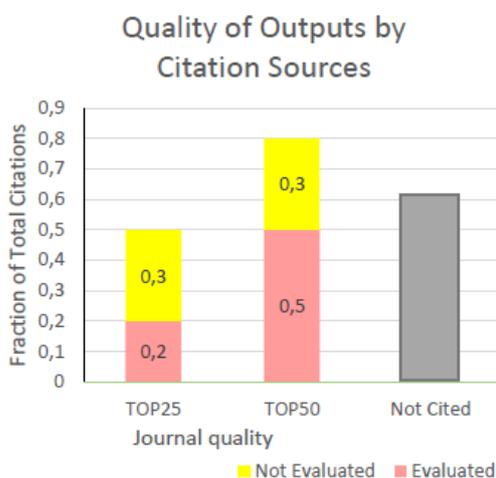
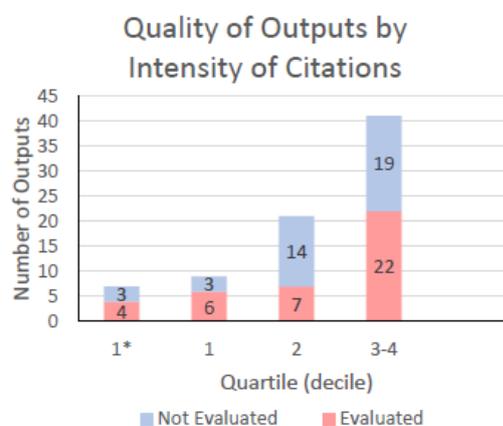
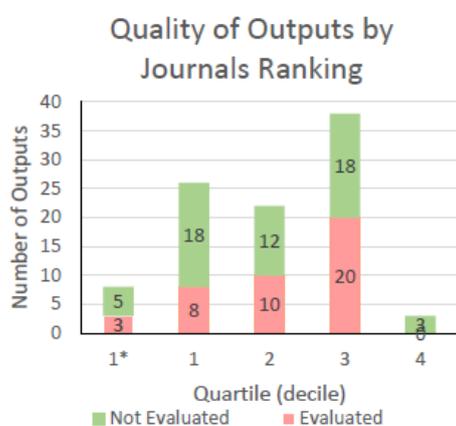
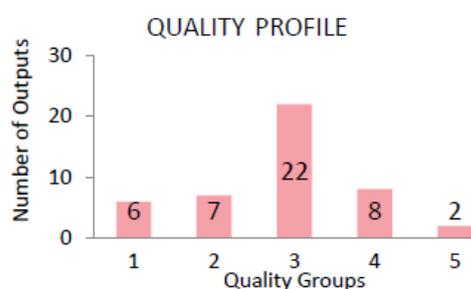
<sup>5</sup> A high number of citations of the team may sometimes generate only a very small number of highly cited outputs.

## RESULTS OF THE I. STAGE OF EVALUATION AND BIBLIOMETRIC PARAMETERS

<b>INSTITUTE:</b> Institute of Mathematics AS CR, v.v.i.	<b>TEAM:</b> Team no. 1	<b>HEAD:</b> Jaroslav Novák
<b>TOTAL NUMBER OF OUTPUTS:</b> 24	<b>EVALUATED OUTPUTS:</b> 14	

### QUALITY GROUPS OF OUTPUTS

QUALITY	1	2	3	4	5
OUTPUTS	6	7	22	8	5



Field Structure of Outputs	Outputs (Evaluated)	Outputs (not Evaluated)	Average number of co-authors
Electrochemistry	4	6	7
Biochem. Mol.Biol	8	15	10
Mol.Oncology	4	7	6
Chem.Analytical	15	21	5
Chem. Physical	4	3	6

Quality Profile: number of outputs vs quality groups (5 groups) Quality of Outputs by Journals Ranking: number of outputs in quartiles (1-4) or top decile (1\*) by AIS of journals. Quality of Outputs by Intensity of Citations: number of outputs in quartiles (1, 2, 3-4) or top decile (1\*) of the list of outputs ordered by the number of citations. Quality of Outputs by Citation Sources: fraction of citations of all outputs in top quartile (TOP25) or top half (TOP50) of list of journals ordered by AIS; fraction of not cited outputs is added. Field Structure of Outputs: number of outputs of the team in different categories.

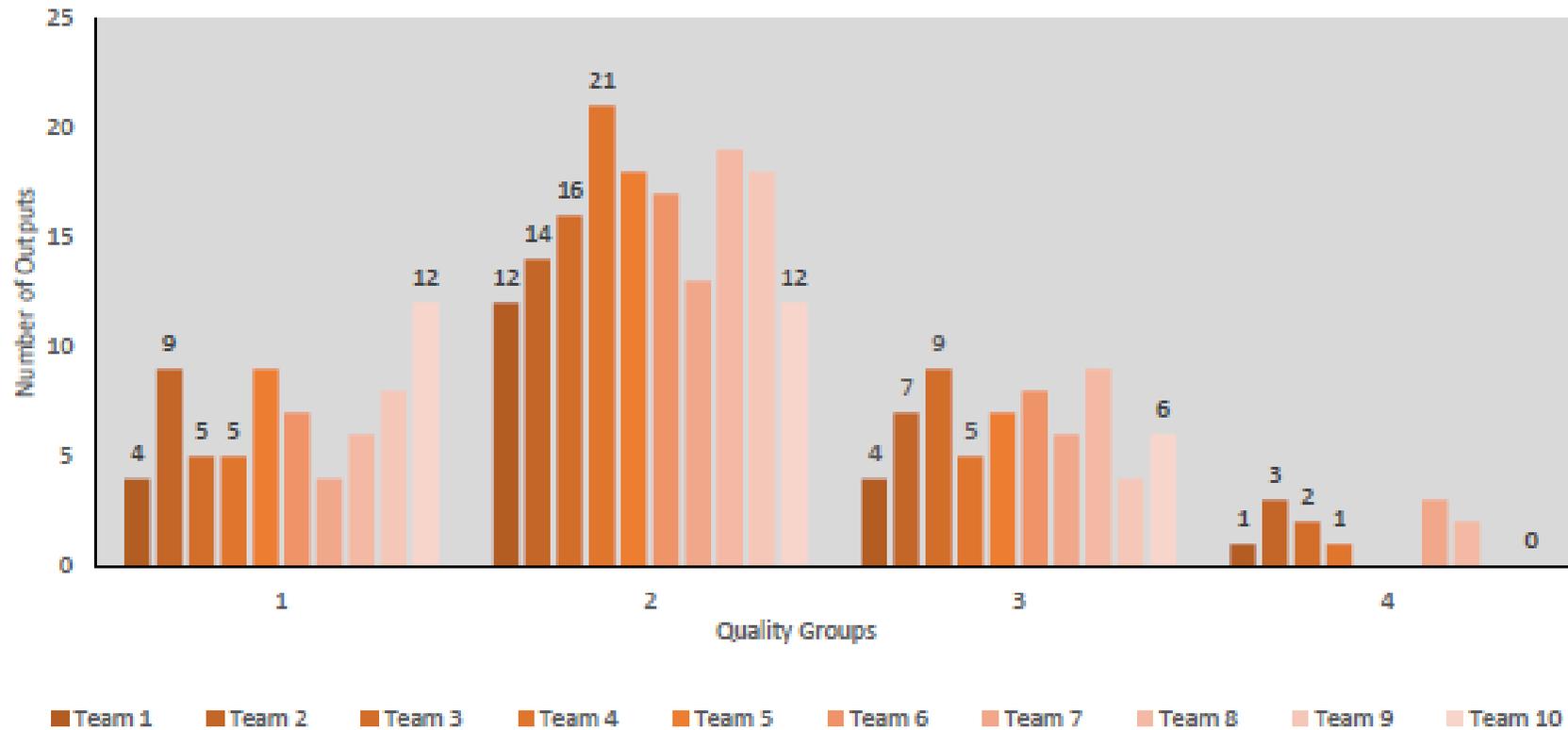
## **Aggregated information on the Institute level**

The above-described information about the individual teams is furthermore displayed summarily for the whole Institute. However, the purpose of the summaries is not to compare the individual teams, and this warning will be listed with each summary. The reason is that the teams can be mutually compared only when they operate in sufficiently similar disciplines, concerning both the publication practice and the implementation of the research, and when the teams' size, time of existence, background, etc. are taken into account. Such information can be read from bibliometric data only in a limited extent. Some of this information is contained in the team tables **Field Structure of Outputs**, particularly the information on the occurrence of the team's outputs in WoS journal disciplines and the average size of the author teams. The panel members will obtain the rest of the information from the self-evaluation report or during *site-visit*.

On the level of the Institute, the following three overall graphs in A4 landscape format will be available to the panels. They sum up the information from the team lists **Quality Profiles**, **Quality of Outputs by Journals**, **Quality of Outputs by Intensity of Citations**. The name of the Institute and possibly the identification number are listed in the upper part of the graph. Moreover, the team numbers (the order numbers within the framework of the Institute or the identification numbers of the teams) will be listed down at the base of the bar graphs for better orientation. The overall numbers are listed above the bars.

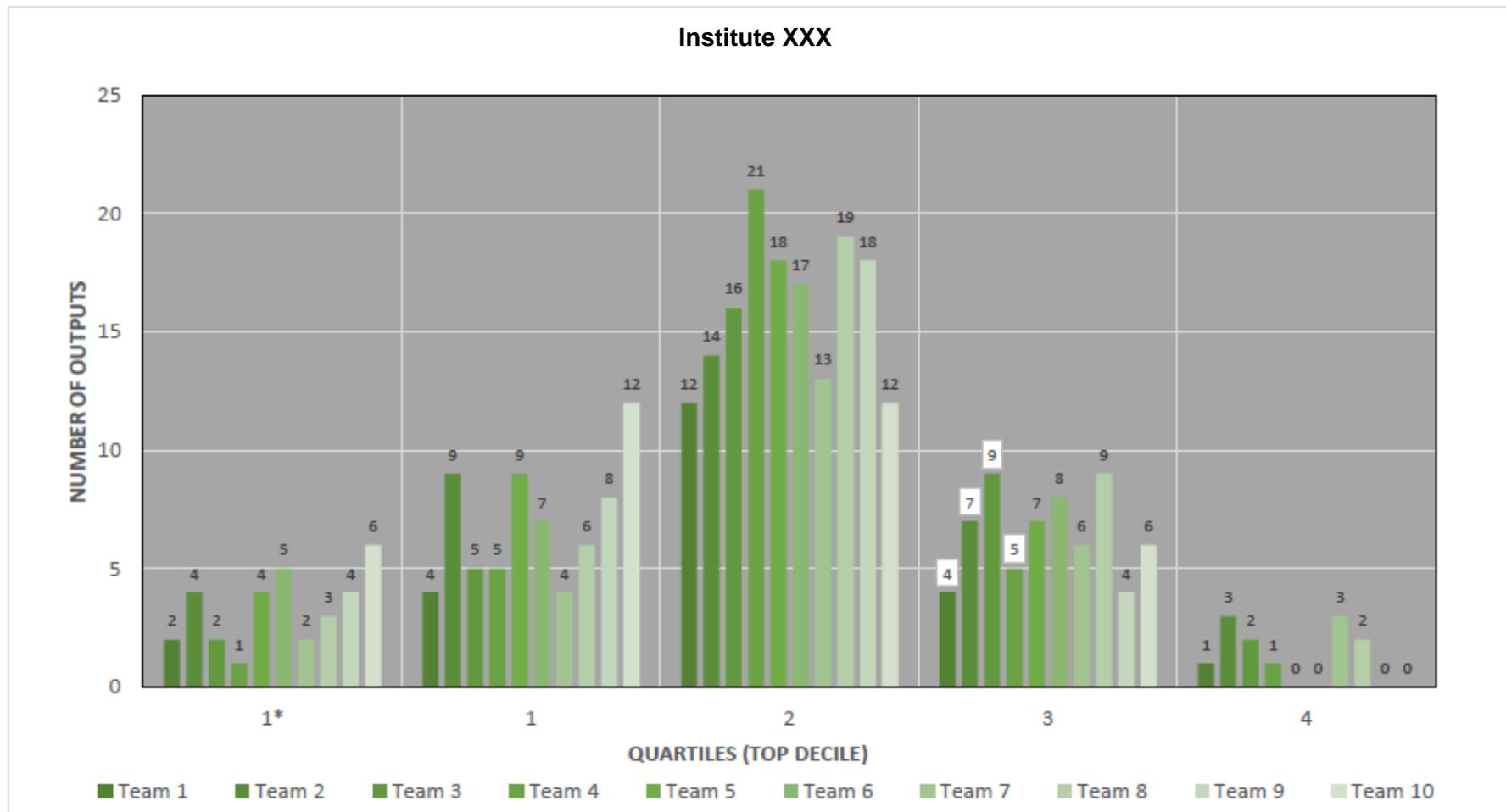
## QUALITY PROFILES

### Institute XXX



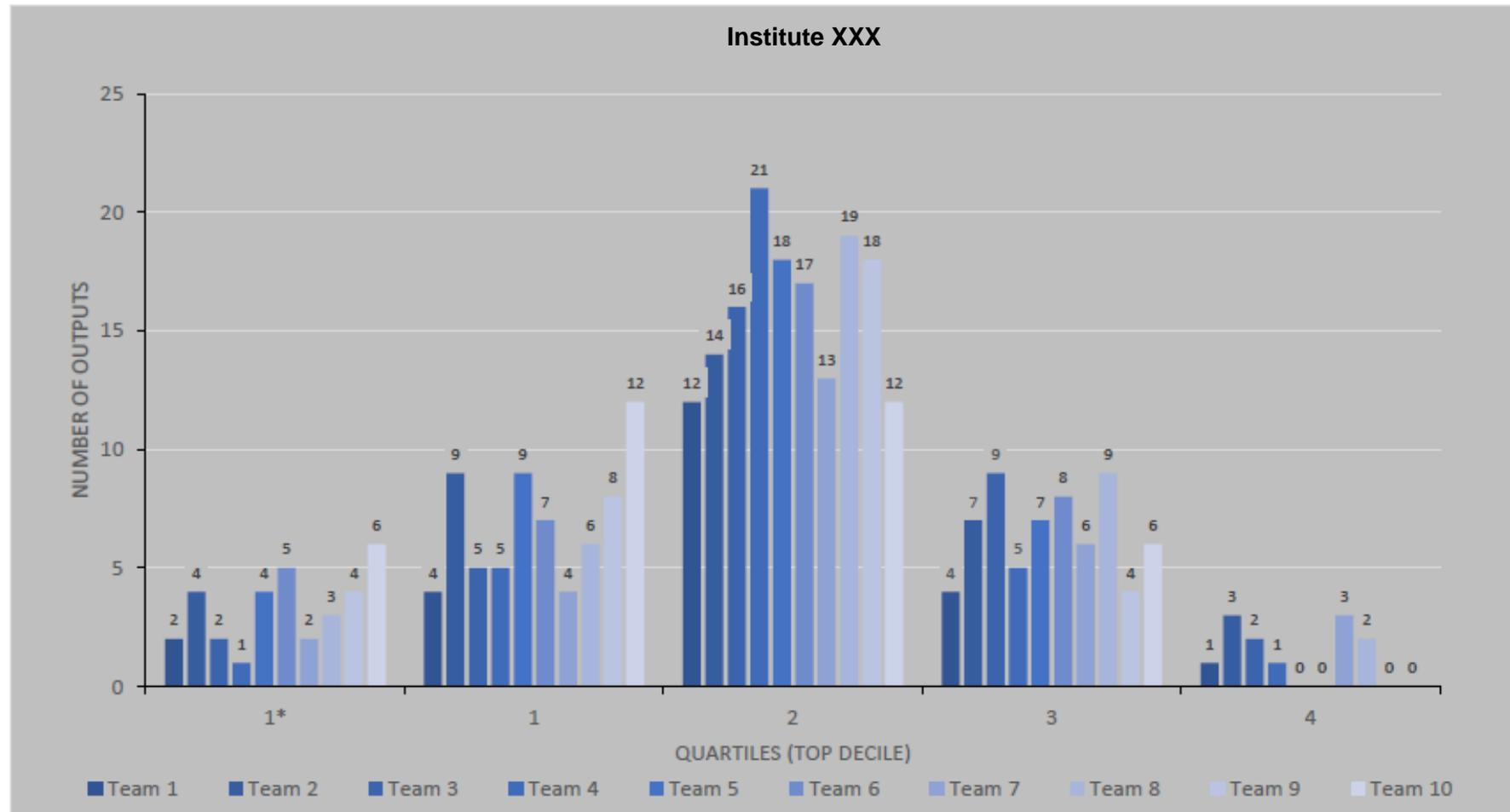
This plot is presented as an aggregate of data from the I. stage of evaluation for convenience of evaluators in the II. stage; the columns represent outputs (not productivity) and cannot be directly compared to each other.

## QUALITY OF OUTPUTS BY JOURNALS



This plot is presented as an aggregate of bibliometric data for convenience of evaluators; the columns represent outputs (not productivity) and cannot be directly compared to each other.

## QUALITY OF OUTPUTS BY INTENSITY OF CITATIONS



This plot is presented as an aggregate of bibliometric data for convenience of evaluators; the columns represent outputs (not productivity) and cannot be directly compared to each other.

## Global analysis of the position of the Institutes within the CR

The purpose of this comparison is to simplify the assessment of the position of the Institutes of the CAS within the framework of the Czech Republic. The possibilities are limited here to a certain extent, because data from the RIV (Czech Information Register of R&D Results) cannot be used (it does not cover the whole period under evaluation at the beginning of the year) and data in the WoS database does not always have sufficiently reliable affiliations (“acad sci czech republic” is not listed in the affiliation, for example).

The comparison can only be reliable within the framework of the disciplines (WoS Categories) and will therefore be carried out in this structure. The comparison will include all outputs<sup>6</sup> from the WoS database with the Czech affiliation from the time period 2010–2014, and the comparison will be carried out within this set (i.e., it will produce quartiles and deciles for the Czech Republic). There will be two tables for each WoS discipline, one derived from the quality of the journals, and the other from the citation rate of the outputs. The numbers will be listed separately for the individual Institutes of the CAS<sup>7</sup> and separately for outputs with the Czech affiliation without the CAS affiliation (without participation of authors from the CAS).

The table **Quality of Journals** shows how many outputs of the given Institute published in a journal with high or low AIS citation index, taking the discipline specifics into consideration. It lists the number of outputs in the top decile (1\*) and the quartiles of all journals of the given WoS discipline, sorted within the framework of this WoS discipline.<sup>8</sup> An output in a journal that is included in several WoS disciplines thus appears in several discipline tables, which does not hamper the comparison in any way.

### DISCIPLINE 176 ZOOLOGY (Quality of Journals)

INSTITUTE	TOP DECILE	Q1	Q2	Q3	Q4	OUTPUTS
XXX	7	31	31	20	10	82
YYY	2	17	19	35	7	71
ZZZ	2	9	14	9	9	32
Czech Republic w/o CAS	11	43	35	65	45	199
Total	22	100	99	130	71	384

The table **Quality of Citations** shows how many outputs of the given Institute were cited above and below average, with the specification of the discipline, type and year of publication. It lists the numbers of outputs in the top decile (1\*) and in the quartiles; the decile and the quartiles are always determined separately for the given type of output, WoS

<sup>6</sup> Articles, Reviews, Proceeding Papers.

<sup>7</sup> The outputs of the CAS Institutes will be identified among all the outputs with the Czech affiliation in WoS using ASEP data. In order to reduce the extent of the tables, only the Institutes of the CAS that have more than the threshold value of 5 publications in the given WoS discipline will be listed in the tables.

<sup>8</sup> The order of the journals within the framework of WoS according to AIS is determined separately for each year, although it is usually not subject to fundamental changes between individual years.

discipline and year of publication, sorted according to the citation rate of the outputs in the Czech Republic.<sup>9</sup>

#### DISCIPLINE 176 ZOOLOGY (Quality of Citations)

INSTITUTE	TOP DECILE	Q1	Q2	Q3-4	OUTPUTS
XXX	7	31	31	20	82
YYY	2	17	19	35	71
ZZZ	2	9	14	9	32
Czech Republic w/o CAS	11	43	35	65	199
Total	22	100	99	130	384

This material will be rather extensive (176 WoS disciplines for the natural sciences), but it will be used by all panels. In order to simplify the orientation of the panel members, the material will start with the list of the Institutes of the CAS and the names of the WoS disciplines and page numbers where the information about the given Institute is listed.

The last table summarises the information from the 176 discipline tables described above for each Institutes of the CAS. The aim of the table is to show whether or not the Institute is on a top position on the national scale from the viewpoint of the quality of journals and the citation rate. If need be, the panel members must identify the particular causes of a certain focus profile from further information, or based on questions asked during the on-site visit.

#### Fractions of Outputs of Institutes in TOP Quartile (TOP Decile) of the Czech Republic

INSTITUTE	TOP DECILE		TOP QUARTILE		TOTAL OUTPUTS
	Journals	Citations	Journals	Citations	
CAS – XXX	15 %	15 %	30 %	22 %	586
CAS – YYY	3 %	5 %	35 %	28 %	366
CAS – ZZZ	14 %	10 %	36 %	21 %	862
CAS – WWW	20 %	15 %	39 %	25 %	258
Etc.					

<sup>9</sup> The order of the journals within the framework of WoS according to number of citations is determined separately for each year, namely in the period of 2010–2012.

# Evaluation of the Research and Professional Activity of the Institutes of the CAS for the period 2010–2014

## Appendix 5.1 – Conflict of Interest

---

### **Definition of the conflict of interests for Reviewers – Head of Panel, Commission Chair and Deputy Chair, Panel Member, Commission Member and Evaluator:**

For the Research Evaluation Exercise 2015, held by the Czech Academy of Sciences, a conflict of interests exists if a Reviewer:

- (a) Was involved in the preparation of/is co-author of the outputs and/or results to be evaluated (applies to Evaluators only),
- (b) Has close family ties (spouse, domestic or non-domestic partner, child, sibling, parent etc.) or other close personal relationship with any person, who is co-author of the outputs and/or results to be evaluated and who is from the assessment unit to be evaluated, or with the head of assessment unit to be evaluated or with any person representing legal entity to be evaluated,
- (c) Is in any way involved in the management of any legal entity to be evaluated,
- (d) Is employed or contracted by any legal entity to be evaluated,
- (e) Has or has had a relationship of scientific rivalry or professional hostility with any co-author of the outputs and/or results to be evaluated or with the head of assessment unit to be evaluated,
- (f) Has or has had in the past, a mentor/mentee relationship with any co-author of the outputs and/or results to be evaluated who is from the assessment unit to be evaluated, or with any person from the legal entity or assessment unit to be evaluated.

Coordination Board, upon notification from the Reviewer, will decide whether a conflict of interest exists if any other situation (e.g. joint projects) appears that could cast doubt on the Reviewer's ability to participate in the evaluation impartially, or that could reasonably appear to do so in the eyes of an external third party.

If it is revealed during an evaluation that a Reviewer has knowingly concealed a conflict of interest, the Reviewer will be immediately excluded. Any panel decision in which s/he has participated will be declared null and the output(s) and/or result(s) concerned will be re-evaluated.

# Evaluation of the Research and Professional Activity of the Institutes of the CAS for the period 2010–2014

## Appendix 5.2 – Guide for Evaluators – Phase I

---

### About the Czech Academy of Sciences:

The Czech Academy of Sciences (CAS) is a public non-university research institution, consisting of 54 research Institutes, covering scientific fields from Natural sciences, Engineering and technology, Medical and health sciences, Social sciences and Humanities.

The CAS employs about 7,000 employees, more than a half of whom are researchers with university degrees. Approximately two thirds of the employees are paid from institutional sources funded by the CAS from the state budget of the Czech Republic.

### About the Research Evaluation Exercise 2015:

The research evaluation of the Institutes of the CAS for the period 2010-2014 will focus on individual *assessment units*

within the Institutes; each assessment unit will be evaluated by one of 13 Field *Panels* (Phase I) or review *Commissions* (Phase II) established specifically for the purposes of this exercise according to particular OECD Fields of Science and Technology (FOS) (listed in *Annex 1*).

The Research Evaluation Exercise will consist of two phases. In Phase I, international evaluators will assess limited number of research outputs submitted by *assessment units* to 13 Panels. In Phase II, the Commissions, set up for the same 13 fields as Panels for Phase I, will assess the Institutes as well as their teams (assessment units) from the points of view of quality, relevance and vitality.

In **Phase I**, which resembles a modified version of the British Research Excellence Framework (REF), international evaluators will assess limited number of research outputs (articles in scientific journals, patents, book chapters, scientific monographs etc.) submitted by the assessment units to 13 Field Panels, which result from aggregating several OECD Fields of Science and Technology, see Tables in Annexes 1 and 2 at the end of this document.

The Panel consists of a Head and several Members to be selected by the Management of the CAS and named by the President of the CAS. The number of panel Members and composition of the panels will be determined according to the expected number of outputs to be assessed by the panel. Each Panel Member will be assigned responsibility for organisation of the evaluation in specific Subfield of the panel; in principle, in very populated more Panel Members may be assigned to specific Subfields (list of Subfields is in Annex 2 below).

Panel Head will distribute all submitted outputs among the Panel Members, assigned to individual Subfields of the panel field. Panel Members will select two Evaluators for each of the assigned outputs. Panel Head, Panel Members as well as Evaluators will have to claim (electronically) the absence of any potential conflict of interest (specified in Annex 3). The Panel Members and Evaluators will be expected to reject the assessment of particular output, if they feel they are in conflict of interest.

The appointed Evaluators will assess assigned outputs remotely from their home institutions through the on-line information system established by the CAS. The Evaluators will be provided with the research outputs to be assessed (predominantly in pdf-format), as well as relevant bibliometrics and other relevant data. It will be left to the panels to decide whether or to what extent the bibliometric information will be taken into account in the evaluation.

Evaluators will grade each assessed output by one of the five *quality levels*:

**(1):** Quality that is world-leading in terms of originality, significance and rigour.

**(2):** Quality that is internationally excellent in terms of originality, significance and rigour but which falls short of the highest standards of excellence.

**(3):** Quality that is recognized internationally in terms of originality, significance and rigour.

**(4):** Quality that is recognized nationally in terms of originality, significance and rigour.

**(5):** Quality that falls below the standard of nationally recognized work. Or work which does not meet the published definition of research for the purposes of this assessment.

**Notes on the criteria and definitions of quality levels:**

**'World-leading'** quality denotes an absolute standard of quality in each field and Subfield.

**'World leading'**, 'internationally' and 'nationally' in this context refer to quality standards. They do not refer to the nature or geographical scope of particular subjects, nor to the locus of research nor its place of dissemination. For example, research which is focused on the subject specific to the Czech Republic might be of 'world leading' standard. On the contrary, work with an international focus might not be of 'world leading, internationally excellent or internationally recognized' standard.

The grading of a given output should be done **solely on the basis of its scientific quality** *without regard to the contribution of particular assessment unit members to its production*. The Evaluators may, however, indicate in the comment section the need to clarify this point during Phase II of the Evaluation.

To facilitate the reconciliation of potential differences between the assessment of the two Evaluators, Evaluators will indicate in a comment to the grading of the output whether the quality of the output corresponds exactly to a given grading (say N), or whether the quality is somewhat better (N+) or worse (N-).

If the two Evaluators do not agree on the grading of a given output by one unit (N and N+1), the Panel Member responsible for its handling will decide on its final grading taking into account the comments to the grading. If the two evaluators differ in grading of an output by two or more units (N and N+2) he/she will solicit assessment by a third Evaluator and then, the Panel Chair will decide about the final classification upon recommendation of the Panel Member relevant to the respective field.

If over the best effort two required assessments of the output are not provided (no assessment at all or one assessment only), Panel Chair will decide about the final classification of the output in question upon the recommendation of the Panel Member relevant to the respective field.

All outputs and information for Phase I will be available by April 1, 2015. Evaluators and Panel Members will then have almost three months, i.e. until the June 19, 2015, to complete their work. Panel Chairs are expected to close the work of the panel until the June 30, 2015.

The result of Phase I will be a quality profile of each *assessment unit* (research team), which will provide one of the inputs into Phase II of the evaluation procedure.

## Annex 1 – Classification

Main Field no.	FOS no.	Main Field/Fields of Science and Technology (FOS)	Panel/ Commission
<b>1</b>		<b>Natural sciences</b>	
	1.1	Mathematics	<b>1</b>
	1.2	Computer and information sciences	<b>2</b>
	1.3	Physical sciences	<b>3</b>
	1.4	Chemical sciences	<b>4</b>
	1.5	Earth and related environmental sciences	<b>5</b>
		Biological sciences	
	1.6B	<i>Biochemistry and molecular cell biology, biophysics, virology,...</i>	<b>6</b>
	1.6O	<i>Biological sciences including biotechnology and agricultural sciences</i>	<b>7</b>
<b>2</b>		<b>Engineering and technology</b>	<b>8</b>
	2.2	Electrical engineering, electronic engineering, information engineering	
	2.3,2.1	Mechanical and civil engineering	
	2.4	Chemical engineering	
	2.5	Materials engineering, materials science and nanotechnology	
	2.6	Metrology and diagnostic methods	
<b>3</b>		<b>Medical and health sciences</b>	<b>9</b>
	3.1	Basic medicine	
	3.2	Clinical medicine	
	3.3	Health sciences	
	3.4	Medical biotechnology and medical engineering	
<b>5</b>		<b>Social sciences</b>	<b>10</b>
	5.1	Psychology	
	5.2	Economics and business	
	5.4	Sociology	
	5.5	Law	
	5.6	Political science	
	5.7	Social and economic geography	
<b>6</b>		<b>Humanities</b>	
	6.1	History and archaeology	<b>11</b>
	6.2	Languages and literature	<b>12</b>
		Humanities excluding 6.1 and 6.2	<b>13</b>
	6.3	Philosophy, ethics and religious studies	
	6.4	Arts (arts, history of arts, performing arts, music)	
	6.5	Other humanities	

## Annex 2 – Fields of Science and Technology (FOS) and Subfields

### 1. Natural sciences

#### 1.1 Mathematics

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Pure mathematics	
2		MATHEMATICS
3	Applied mathematics	MATHEMATICS, APPLIED
4	Statistics and probability <sup>1</sup>	STATISTICS & PROBABILITY
5		MATHEMATICS, INTERDISCIPLINARY APPL.
6		LOGIC

#### 1.2 Computer and information sciences

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Computer sciences, information science and bioinformatics <sup>2</sup>	
2		COMP. SCI., ARTIFICIAL INTELLIG.
3		COMP. SCI., CYBERNETICS
4		COMP. SCI., INFORMAT. SYSTEMS
5		COMP. SCI., INTERDISC APPL.
6		COMP. SCI., THEORY & METHODS

#### 1.3 Physical sciences

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Atomic, molecular and chemical physics (physics of atoms and molecules including collision, interaction with radiation, magnetic resonances, Mössbauer effect)	PHYSICS, ATOMIC, MOLECULAR & CHEMICAL
2	Condensed matter physics (including formerly solid state physics, supercond.)	PHYSICS, CONDENSED MATTER

<sup>1</sup> This includes research on statistical methodologies, but excludes research on applied statistics which should be classified under the relevant field of application (e.g. Economics, Sociology, etc.).

<sup>2</sup> Hardware development to be 2.2, social aspects to be 5.8.

3	Particles and field physics	PHYSICS, PARTICLES & FIELDS
4	Nuclear physics	PHYSICS, NUCLEAR NUCLEAR SCIENCE & TECHNOL.
5	Fluids and plasma physics (including surface physics)	PHYSICS, FLUIDS & PLASMAS
6	Optics (including laser optics and quantum optics)	OPTICS
7	Acoustics	ACOUSTICS
8	Astronomy (including astrophysics, space science)	ASTRONOMY & ASTROPHYSICS
9		CRYSTALLOGRAPHY
10		PHYSICS, APPLIED
11		PHYSICS, MATHEMATICAL
12		PHYSICS, MULTIDISCIPLINARY
13		SPECTROSCOPY

#### **1.4 Chemical sciences**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Organic chemistry	CHEMISTRY, ORGANIC
2	Inorganic and nuclear chemistry	CHEMISTRY, INORGANIC & NUCL.
3	Physical chemistry	CHEMISTRY, PHYSICAL
4	Polymer science	POLYMER SCIENCE
5	Electrochemistry (dry cells, batteries, fuel cells, corrosion metals, electrolysis)	ELECTROCHEMISTRY
6	Colloidochemistry	
7	Analytical chemistry	CHEMISTRY, ANALYTICAL
8		CHEMISTRY, APPLIED
9		CHEMISTRY, MULTIDISCIPLINARY

#### **1.5 Earth and related environmental sciences, environmental engineering**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Geosciences, multidisciplinary	GEOSCIENCES, MULTIDISCIPLIN
2	Mineralogy	MINERALOGY
3	Palaeontology	PALEONTOLOGY
4	Geochemistry and geophysics	GEOCHEMISTRY & GEOPHYSICS
5	Physical geography	GEOGRAPHY, PHYSICAL GEOGRAPHY
6	Geology	GEOLOGY
7	Volcanology	

8	Environmental sciences <sup>3</sup>	ENVIRONMENTAL SCIENCES
9	Meteorology and atmospheric sciences	METEOROLOGY & ATM. SCIENCES
10	Climatic research	
11	Oceanography	OCEANOGRAPHY
12	Hydrology	
13	Water resources	WATER RESOURCES
14	Environmental and geological engineering, geotechnics	ENGINEERING, ENVIRONMENTAL ENGINEERING, GEOLOGICAL
15	Petroleum engineering (fuels, oils)	ENGINEERING, PETROLEUM
16	Energy and fuels	ENERGY & FUELS
17	Remote sensing	REMOTE SENSING
18	Mining and mineral processing	MINING & MINERAL PROCESSING
19	Marine engineering, sea vessels	ENGINEERING, MARINE
20	Ocean engineering	ENGINEERING, OCEAN

**1.6B Biochemistry, molecular & cell biology, biophys., virology, reprod. and develop. biol.**

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Cell biology	CELL BIOLOGY
2	Microbiology	MICROBIOLOGY
3	Virology	VIROLOGY
4	Biochemistry and molecular biology (including chemical aspects of Medical chemistry)	BIOCHEMISTRY & MOL. BIOLOGY
5	Biochemical research methods	BIOCHEMICAL RESEARCH METHODS
6	Biophysics	BIOPHYSICS
7	Genetics and heredity <sup>4</sup>	GENETICS & HEREDITY
8	Reproductive biology <sup>5</sup>	REPRODUCTIVE BIOLOGY
9	Developmental biology	DEVELOPMENTAL BIOLOGY

**1.6O Biological sciences including biotechnology and agricultural sciences**

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Mycology	MYCOLOGY
2	Plant sciences, botany	PLANT SCIENCES
3	Zoology	ZOOLOGY

<sup>3</sup> Social aspects to be 5.7.

<sup>4</sup> Medical genetics to be 3.

<sup>5</sup> Medical aspects to be 3.

4	Ornithology	ORNITHOLOGY
5	Entomology	ENTOMOLOGY
6	Behavioural sciences biology	BEHAVIORAL SCIENCES
7	Marine biology, freshwater biology	MARINE & FRESHWATER BIOL
8	Limnology	LIMNOLOGY
9	Ecology	ECOLOGY
10	Biodiversity conservation	BIODIVERSITY CONSERVATION
11	Biology (theoretical, mathematical, thermal, cryobiology, biological rhythm)	BIOLOGY
12		MATHEMATICAL & COMPUTATIONAL BIOLOGY
13	Evolutionary biology	EVOLUTIONARY BIOLOGY
14	Other biological topics	
	<b>Biotechnology and industrial biology</b>	
15	Environmental biotechnology	
16	Bioremediation, diagnostic biotechnologies (DNA chips and biosensing devices) in environmental management	
17	Environmental biotechnology related ethics	
18	Industrial biotechnology	
19	Bioprocessing technologies (industrial processes relying on biological agents to drive the process), biocatalysis, fermentation industrial processes	
20	Bioproducts (products that are manufactured using biological material as feedstock)	
21	Biomaterials, bioplastics, biofuels, bioderived bulk and fine chemicals, bio-derived novel materials	MATERIALS SCIENCE, BIOMATERIALS BIOTECHNOLOGY & APPLIED MICROBIOLOGY
	<b>Agricultural sciences</b>	
22	Agriculture	AGRICULTURE, MULTIDISCIPLIN.
23	Forestry	FORESTRY
24	Fishery	FISHERIES
25	Soil science	SOIL SCIENCE
26	Horticulture, viticulture	HORTICULTURE
27	Agronomy, plant breeding and plant protection	AGRONOMY
28	Veterinary science	VETERINARY SCIENCES
29	Agricultural biotechnology and food biotechnology	
30	GM technology (crops and livestock),	

	livestock cloning, marker assisted selection, diagnostics (DNA chips and biosensing devices for the early/accurate detection of diseases) biomass feedstock production technologies, biopharming; agricultural biotechnology related ethics;	
31	Agricultural engineering	AGRICULTURAL ENGINEERING
32	Food science & technology	FOOD SCIENCE & TECHNOLOGY
33	Animal & dairy science	AGRICULTURAL ECONOMICS POLICY
34		AGRICULTURAL DAIRY & ANIMAL SCIENCE

## 2. Engineering and technology

### *2.2 Electrical engineering, electronic engineering, information engineering*

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Electrical and electronic engineering	ENGINEERING, ELECTRICAL & ELECTRONIC
2	Robotics and automatic control	ROBOTICS
3	Automation and control systems	AUTOMATION & CONTROL SYSTS.
4	Communication engineering and systems	
5	Telecommunications	TELECOMMUNICATIONS
6	Computer hardware and architecture	COMPUTER SCIENCE, HARDWARE & ARCHITECTURE
7		COMP. SCI. SOFTWARE ENGINEER.

### *2.1 and 2.3 Mechanical and civil engineering*

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Mechanical engineering	ENGINEERING, MECHANICAL
2	Applied mechanics	MECHANICS
3	Thermodynamics	THERMODYNAMICS
4	Aerospace engineering	ENGINEERING, AEROSPACE
5	Nuclear and related engineering <sup>6</sup>	NUCLEAR SCIENCE & TECHNOL.
6	Audio engineering, reliability analysis	
7	Construction engineering	CONSTRUCTION & BUILDING

<sup>6</sup> Nuclear physics to be 1.3.

		TECHNOLOGY
8	Civil engineering	ENGINEERING, CIVIL
9	Architecture engineering	ARCHITECTURE
10	Transport engineering	TRANSPORTATION SCIENCES & TECHNOLOGY
11	Municipal and structural engineering	
12		ENGINEERING, MULTIDISCIPLIN.
13		ENGINEERING, INDUSTRIAL
14		ENGINEERING, MANUFACTURING

#### **2.4 Chemical engineering**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Chemical engineering (plants, products)	ENGINEERING, CHEMICAL
2	Chemical process engineering	

#### **2.5 Materials engineering, materials science and nanotechnology**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Materials engineering	
2	Ceramics	MATERIALS SCIENCE, CERAMICS
3	Coatings and films	MAT. SCIENCE, COATINGS & FILMS
4	Composites (including laminates, reinforced plastics, cermets, combined natural and synthetic fibre fabrics; filled composites)	MAT. SCIENCE, COMPOSITES
5	Paper and wood	MAT. SCIENCE, PAPER & WOOD
6	Textiles; including synthetic dyes, colours, fibres	MATERIALS SCIENCE, TEXTILES
7		MAT. SCI., CHARACTERIZATION & TESTING
8		MAT. SCI., MULTIDISCIPLINARY
9		METALLURGY & METALLURGICAL ENGINEERING
10	Nano-materials (production and properties)	
11	Nano-processes (applications on nano-scale)	
12		NANOSCIENCE & NANOTECHNOLOGY

## 2.6\* Metrology and diagnostic methods

	Subfield – Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1		INSTRUMENTS & INSTRUMENTATION
2		MATERIALS SCIENCE, CHARACTERIZATION & TESTING
3		MICROSCOPY
4		OPTICS
5		IMAGING SCIENCE & PHOTOGRAPHIC TECHNOLOGY

## 3. Medical and Health sciences

### 3.1 Basic medicine

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Anatomy and morphology	ANATOMY & MORPHOLOGY
2	Human genetics	
3	Immunology	IMMUNOLOGY
4	Neurosciences (including psychophysiology)	NEUROSCIENCES
5	Pharmacology & pharmacy	PHARMACOLOGY & PHARMACY
6	Medicinal chemistry (including medical aspects of Medicinal chemistry)	CHEMISTRY, MEDICINAL
7	Toxicology	TOXICOLOGY
8	Physiology (including cytology)	PHYSIOLOGY
9	Pathology	PATHOLOGY
10		MEDICINE, RESEARCH & EXPERIMENTAL
11		NEUROIMAGING

### 3.2 Clinical medicine

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Andrology	ANDROLOGY
2	Obstetrics and gynaecology	OBSTETRICS AND GYNAECOLOGY
3	Paediatrics	PEADIATRICS
4	Cardiac and cardiovascular systems	CARDIAC & CARDIOVASCULAR SYSTEMS

5	Peripheral vascular disease	PERIPHERAL VASCULAR DISEASE
6	Haematology	HEMATOLOGY
7	Respiratory systems	RESPIRATORY SYSTEM
8	Critical care medicine and emergency medicine	CRITICAL CARE MEDICINE EMERGENCY MEDICINE
9	Anaesthesiology	ANAESTESIOLOGY
10	Orthopaedics	ORTHOPAEDICS
11	Surgery	SURGERY
12	Radiology, nuclear medicine and medical imaging	RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
13	Transplantation	TRANSPLANTATION
14	Dentistry, oral surgery and medicine	DENTISTRY, ORAL SURGERY & MEDICINE
15	Dermatology and venereal diseases	DERMATOLOGY
16	Allergy	ALLERGY
17	Rheumatology	RHEUMATOLOGY
18	Endocrinology and metabolism (including diabetes, hormones)	ENDOCRINOLOGY & METABOLISM
19	Gastroenterology and hepatology	GASTROENTEROLOGY & HEPATOLOGY
20	Urology and nephrology	UROLOGY & NEPHROLOGY
21	Oncology	ONCOLOGY
22	Ophthalmology	OPHTHALMOLOGY
23	Otorhinolaryngology	OTORHINOLARYNGOLOGY
24	Psychiatry	PSYCHIATRY PSYCHIATRY
25	Clinical neurology	CLINICAL NEUROLOGY
26	Geriatrics and gerontology	GERIATRICS AND GERONTOLOGY GERONTOLOGY
27	General and internal medicine	MEDICINE , GENERAL & INTERNAL
28	Other clinical medicine subjects	
29	Integrative and complementary medicine (alternative practical systems)	INTEGRATIVE & COMPLEMENTARY MEDICINE
30		AUDIOLOGY SPEECH & LANGUAGE PATHOLOGY

### 3.3 Health sciences

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Health care sciences and services (including hospital administration, health care financing)	HEALTH CARE SCIENCES & SERVICES
2	Health policy and services	HEALTH POLICY & SERVICES
3	Rehabilitation	REHABILITATION

		REHABILITATION
4	Nursing	NURSING NURSING
5	Nutrition, dietetics	NUTRITION & DIETETICS
6	Public and environmental health Occupational health	PUBLIC, ENVIRONMENTAL & OC- CUPATIONAL HEALTH
7	Tropical medicine	TROPICAL MEDICINE
8	Parasitology	PARASITOLOGY
9	Infectious diseases	INFECTIOUS DISEASES
10	Epidemiology	
11	Sport and fitness sciences	SPORT SCIENCES
		HOSPITALITY LEISURE & TOUR- ISM
12	Social biomedical sciences (includes family planning, sexual health, psy- cho-oncology, political and social ef- fects of biomedical research)	
13	Medical ethics	MEDICAL ETHICS
14	Substance abuse	SUBSTANCE ABUSE
15		MEDICINE, LEGAL
16		PSYCHOLOGY
17		PRIMARY HEALTH CARE
18		ERGONOMICS

### ***3.4 Medical biotechnology and medical engineering***

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Health-related biotechnology	
2	Technologies involving the manipula- tion of cells, tissues, organs or the whole organism (assisted reproduc- tion)	
3	Technologies involving identifying the functioning of DNA, proteins and en- zymes and how they influence the onset of disease and maintenance of well-being (gene-based diagnostics and therapeutic interventions (phar- macogenomics, gene-based thera- peutics)	
4	Biomaterials (as related to medical implants, devices, sensors)	
5	Medical biotechnology related-etics	
6		CELL & TISSUE ENGINEERING
7	Medical engineering	ENGINEERING, BIOMEDICAL

8	Medical laboratory technology (including laboratory samples analysis; diagnostic technologies)	MEDICAL LABORATORY TECHNOLOGY MEDICAL INFORMATICS
---	--	--

#### 4. Agricultural sciences (included in 1.60)

#### 5. Social sciences

##### 5.1 Psychology

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Psychology (including human-machine relations)	PSYCHOLOGY
2	Psychology, special (including therapy for learning, speech, hearing, visual and other physical and mental disabilities)	
3		PSYCHOLOGY, APPLIED
4		PSYCHOLOGY, BIOLOGICAL
5		PSYCHOLOGY, CLINICAL
6		PSYCHOLOGY, DEVELOPMENTAL
7		PSYCHOLOGY, EDUCATIONAL
8		PSYCHOLOGY, EXPERIMENTAL
9		PSYCHOLOGY, MATHEMATICAL
10		PSYCHOLOGY, MULTIDISCIPLIN.
11		PSYCHOLOGY, PSYCHOANALYSIS
12		PSYCHOLOGY, SOCIAL
13		PSYCHIATRY

##### 5.2 Economics and business

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Economics, econometrics	ECONOMICS
2	Industrial relations	INDUSTRIAL RELATIONS & LABOR
3	Business and management	MANAGEMENT BUSINESS BUSINESS, FINANCE
4		OPERATIONS RESEARCH & MANAGEMENT

#### **5.4 Sociology**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Sociology	SOCIOLOGY
2	Demography	DEMOGRAPHY
3	Anthropology	ANTHROPOLOGY
4	Social topics (Women's and gender studies; Social issues; Family studies, Social work)	WOMEN'S AND GENDER STUDIES SOCIAL ISSUES FAMILY STUDIES SOCIAL WORK
5	Education	EDUCATION & EDUCATIONAL RESEARCH EDUCATION, SCIENTIFIC DISCIPL. EDUCATION, SPECIAL
6		SOCIAL SCIENCES, BIOMEDICAL
7		SOCIAL SCIENCES, INTERDISCIPLINARY
8		SOCIAL SCIENCES, MATHEMATICAL METHODS
9		PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH

#### **5.5 Law**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Law, criminology, penology	LAW CRIMINOLOGY & PENOLOGY

#### **5.6 Political science**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Political science	POLITICAL SCIENCE
2	Public administration	PUBLIC ADMINISTRATION
3	Organisation theory	
4		INTERNATIONAL RELATIONS

### 5.7 Social and economic geography

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	Environmental sciences (social aspects)	ENVIRONMENTAL STUDIES
2	Cultural and economic geography	
3	Urban studies (planning and development)	URBAN STUDIES PLANNING & DEVELOPMENT
4	Transport planning and social aspects of transport	
5		AREA STUDIES
6		CULTURAL STUDIES
7		TRANSPORTATION SCIENCE & TECHNOLOGY
8		TRANSPORTATION

## 6. Humanities

### 6.1 History and archaeology

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	History <sup>7</sup>	HISTORY
2	Archaeology	ARCHAEOLOGY
3		MEDIEVAL & RENAISSANCE STUDIES

### 6.2 Languages and literature

	Subfield – OECD classification	Subfield – WoSCT (JCR categories)
1	General language studies	LANGUAGE & LINGUISTICS
2	Specific languages	
3	General literature studies	LITERATURE REVIEWS LITERATURE
4	Literary theory	LITERARY THEORY & CRITICISM
5	Specific literatures <sup>8</sup>	SPECIFIC LITERATURES
6	Linguistics	LINGUISTICS
7		POETRY

<sup>7</sup> History of science and technology to be 6.3, history of specific sciences to be under the respective headings

<sup>8</sup> Includes all specific literatures (e.g. Czech literature, Asian literature, etc.).

## **Humanities excluding 6.1 and 6.2**

### **6.3 Philosophy, ethics and religion**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Philosophy	PHILOSOPHY
2	History and philosophy of science and technology	HISTORY & PHILOSOPHY OF SCIENCE
3	Ethics <sup>9</sup>	ETHICS
4	Theology	
5	Religious studies	RELIGIOUS STUDIES
6		HISTORY OF SOCIAL SCIENCES
7		LOGIC

### **6.4 Arts (arts, history of arts, performing arts, music)**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Arts, art history	ART
2	Architectural design	ARCHITECTURE
3	Performing arts studies (musicology, theater science, dramaturgy)	THEATER MUSIC
4	Folklore studies	FOLKLORE
5	Studies on film, radio and television	FILM, RADIO, TELEVISION
6	Media and communications	COMMUNICATION

### **6.5 Other humanities**

	<b>Subfield – OECD classification</b>	<b>Subfield – WoSCT (JCR categories)</b>
1	Ethnology	
2		ASIAN STUDIES
3		HUMANITIES, MULTIDISCIPLIN.
4		INFORMATION SCIENCE & LIBRARY SCIENCE
5		CLASSICS
6		DANCE

<sup>9</sup> Except for ethics related to specific subfields.

## Annex 3 – Conflict of Interests

### **Definition of the conflict of interests for Reviewers – Head of Panel, Commission Chair and Deputy Chair, Panel Member, Commission Member and Evaluator:**

For the Research Evaluation Exercise 2015, held by the Czech Academy of Sciences, a conflict of interests exists if a Reviewer:

- (a) Was involved in the preparation of/is co-author of the outputs and/or results to be evaluated (applies to Evaluators only),
- (b) Has close family ties (spouse, domestic or non-domestic partner, child, sibling, parent etc.) or other close personal relationship with any person, who is co-author of the outputs and/or results to be evaluated and who is from the assessment unit to be evaluated, or with the head of assessment unit to be evaluated or with any person representing legal entity to be evaluated,
- (c) Is in any way involved in the management of any legal entity to be evaluated,
- (d) Is employed or contracted by any legal entity to be evaluated,
- (e) Has or has had a relationship of scientific rivalry or professional hostility with any co-author of the outputs and/or results to be evaluated or with the head of assessment unit to be evaluated,
- (f) Has or has had in the past, a mentor/mentee relationship with any co-author of the outputs and/or results to be evaluated who is from the assessment unit to be evaluated, or with any person from the legal entity or assessment unit to be evaluated.

Coordination Board, upon notification from the Reviewer, will decide whether a conflict of interest exists if any other situation (e.g. joint projects) appears that could cast doubt on the Reviewer's ability to participate in the evaluation impartially, or that could reasonably appear to do so in the eyes of an external third party.

If it is revealed during an evaluation that a Reviewer has knowingly concealed a conflict of interest, the Reviewer will be immediately excluded. Any panel decision in which s/he has participated will be declared null and the output(s) and/or result(s) concerned will be re-evaluated.

# Evaluation of the Research and Professional Activity of the Institutes of the CAS for the period 2010–2014

## Appendix 5.3 – Research Evaluation Exercise 2015: The Outline

---

### About the Czech Academy of Sciences:

The Czech Academy of Sciences (CAS) is a public non-university research institution, consisting of a system of 54 research Institutes, covering scientific disciplines from Natural sciences, Engineering and technology, Medical and health sciences, Social sciences and Humanities.

The Academy employs about 7,000 employees, more than a half of whom are researchers with university degrees. Ca. two thirds of them are paid from institutional sources funded by the Academy from the state budget of the Czech Republic.

### About the Research Evaluation Exercise 2015:

The research evaluation of the Institutes of the CAS for the period 2010–2014 will focus on individual *assessment units* within the Institutes; each *assessment unit* will be evaluated by one of 13 field *panels* formed specifically for the purposes of this exercise (panels are listed in Annex 1).

The Research Evaluation Exercise will consist of two phases:

#### Phase I

The first phase will resemble a lighter version of the British Research Excellence Framework (REF) assessment exercise. In this phase, international evaluators, i.e. those who are not based at Czech universities or research institutes, will assess selected individual research outputs submitted to the panels (typically journal articles in most fields) using the REF quality scale. The activity of each panel will be coordinated by a *Panel Chair*.

- The size and composition of the panels will be determined according to the expected number and type of outputs to be assessed, and in cooperation with the *Panel Chairs*, who will be asked to assist (if possible) with identifying/recommending potential members for their panel.
- Assessment will be conducted remotely: There will be an on-line database of research outputs and the full texts of the papers to be assessed, as well as relevant bibliometric data. It will be left to the panels themselves to decide to what extent the bibliometric information is taken into account in the evaluation.
- *Panel Chairs* will not evaluate outputs themselves. They will steer *Panel Members*, coordinate the communication within each panel, mediate decisions in ambiguous cases and prepare the final evaluation report together with the *Panel Members*. They will play a central role in the Phase I of the assessment exercise as they are expected to harmonize the interpretation of the quality marks within their panels and to communicate with the managers of the exercise.
- *Panel Members* will assign the submitted research outputs to individual *Evaluators* (each research output will be assigned to two *Evaluators*) and check the progress made by the *Evaluators*.

- *Evaluators* will grade each assessed item to one of five quality levels, taking into account the scientific quality of the output, its originality, and the importance for given discipline.
- All information for this phase will be available by April 2015; *Panel Members* and *Evaluators* will then have almost three months, i.e. until the June 19, 2015, to complete their work. *Panel Chairs* are expected to close the work of the panel until the June 30, 2015.
- *Panel Chairs*, *Panel Members* and *Evaluators* will be compensated for their work on the evaluation exercise, according to the EU standards.
- The result of Phase I will be a quality profile of each *assessment unit* (research team), which will then represent one of the main inputs into Phase II of the assessment procedure.

## **Phase II**

This phase of the Research Evaluation Exercise will be carried out by *Field Commissions*, consisting from a half of - ideally – the panel members or evaluators from Phase I (international reviewers) and a half of independent Czech reviewers. These committees will consider the quality profiles of *assessment units* made in Phase I, and reports submitted by individual research teams and the Academy institutes. They will also visit each institute (typically comprising several assessment units) in person, to assess the following aspects:

- the importance of the *assessment unit's* contribution to output(s) within larger international collaborative initiatives;
  - the composition of teams;
  - the research strategy, as summarized in the institute's report on past research activities and future plans;
  - the institute's management structure and practices;
  - external collaboration and grant activities;
  - the structure and efficiency of research funding;
  - the institute's involvement in education and other activities (e.g. scientific infrastructures) of relevance to the wider community.
- In all these aspects, assessment will be based on good international practice and made in reference to practices at comparable (high quality) international research institutions.
  - This phase will result in a final report and a set of recommendations.
  - The onsite visits shall take place starting in September 2015 and the final report on each institute should be finalized by the end of 2015.

## **Annex 1 – Fields of science and technology**

Main Field no.	FOS no.	Main Field/Field of Science and Technology (FOS)	Panel/ Commission
<b>1</b>		<b>Natural sciences</b>	
	1.1	Mathematics	<b>1</b>
	1.2	Computer and information sciences	<b>2</b>
	1.3	Physical sciences	<b>3</b>

	1.4	Chemical sciences	<b>4</b>
	1.5	Earth and related environmental sciences	<b>5</b>
		Biological sciences	
	1.6B	<i>Biochemistry and molecular cell biology, biophysics, virology,...</i>	<b>6</b>
	1.6O	<i>Biological sciences including biotechnology and agricultural sciences</i>	<b>7</b>
<b>2</b>		<b>Engineering and technology</b>	<b>8</b>
	2.2	Electrical engineering, electronic engineering, information engineering	
	2.3,2.1	Mechanical and civil engineering	
	2.4	Chemical engineering	
	2.5	Materials engineering, materials science and nanotechnology	
	2.6	Metrology and diagnostic methods	
<b>3</b>		<b>Medical and health sciences</b>	<b>9</b>
	3.1	Basic medicine	
	3.2	Clinical medicine	
	3.3	Health sciences	
	3.4	Medical biotechnology and medical engineering	
<b>5</b>		<b>Social sciences</b>	<b>10</b>
	5.1	Psychology	
	5.2	Economics and business	
	5.4	Sociology	
	5.5	Law	
	5.6	Political science	
	5.7	Social and economic geography	
<b>6</b>		<b>Humanities</b>	
	6.1	History and archaeology	<b>11</b>
	6.2	Languages and literature	<b>12</b>
		Humanities excluding 6.1 and 6.2	<b>13</b>
	6.3	Philosophy, ethics and religious studies	
	6.4	Arts (arts, history of arts, performing arts, music)	
	6.5	Other humanities	

# Evaluation of the Research and Professional Activity of the Institutes of the CAS for the period 2010–2014

## Appendix 5.4 – Evaluator Registration Form

### The Czech Academy of Sciences: Research Evaluation Exercise 2015

#### Evaluator registration form

##### Personal Details

Title	First name	Last name
<input type="text"/>	<input type="text"/>	<input type="text"/>

##### Address

Email Address	<input type="text"/>
Phone Number	<input type="text"/>
Organisation	<input type="text"/>
Town/City	<input type="text"/>
Country	<input type="text"/>
Post code	<input type="text"/>

##### Evaluation phase

Please select at least one evaluation phase you want to participate:

- 1st phase -  evaluator  
 panel member
- 2nd phase -  member of committee

##### Area of expertise

<input type="text" value="Select primary area of expertise..."/>	<input type="text" value="Select secondary area of expertise..."/>
<b>The primary area of expertise is mandatory.</b>	<b>The secondary area of expertise is optional.</b>
Expertise description max. 500 characters - 0	
<input type="text"/>	
Expertise characterised by keywords (comma separated)	
<input type="text"/>	

**Submit registration**

# Evaluation of the Research and Professional Activity of the Institutes of the CAS for the period 2010–2014

## Appendix 5.5 – Letter – Identification of Specific Experts Excluded from the Evaluation

---



AKADEMIE VĚD ČESKÉ REPUBLIKY  
AKADEMICKÁ RADA

ředitelům pracovišť AV ČR kromě KNAV a SSČ

Praha 6. srpna 2014  
čj.: KAV-2182/OPV/2014

Vážená paní ředitelko, vážený pane řediteli,

v souladu s „Principy hodnocení výzkumné a odborné činnosti pracovišť AV ČR za léta 2010–2014“, které byly projednány na XLIII. zasedání Akademického sněmu AV ČR, je připravováno ustavení panelů zahraničních odborníků pro hodnocení výstupů vědeckých týmů v rámci I. fáze hodnocení (dále „panely“) a komisí se zastoupením zahraničních i domácích odborníků pro hodnocení dalších aspektů činnosti týmů a pracovišť v rámci II. fáze hodnocení (dále „komise“). Složení panelů i komisí bude schvalovat Akademická rada AV ČR.

Pokud dle Vašich znalostí existují pádné důvody k tomu, aby některé vědecké osobnosti nebyly členy těchto hodnotících grémií, zašlete mi prosím soupis takových osob se stručným uvedením důvodu zařazení jednotlivých osob na tento soupis. Prosím o jeho zaslání do 1. září 2014 na e-mailovou adresu [opv@kav.cas.cz](mailto:opv@kav.cas.cz). Osobám uvedeným v těchto soupisech následně nebude zaslána výzva ke členství ani v panelech, ani v komisích.

Děkuji Vám za spolupráci.

Se srdečným pozdravem

prof. RNDr. Eva Zažímalová, CSc.

# Evaluation of the Research and Professional Activity of the Institutes of the CAS for the period 2010–2014

## Appendix 6.1 – Guide for Evaluators – Phase II

---

### About the Czech Academy of Sciences:

The Czech Academy of Sciences (CAS) is a public non-university research institution, consisting of 54 research Institutes, covering scientific fields from Natural sciences, Engineering and technology, Medical and health sciences, Social sciences and Humanities.

The CAS employs about 7,000 employees, more than a half of whom are researchers with university degrees. Approximately two thirds of the employees are paid from institutional sources funded by the CAS from the state budget of the Czech Republic.

### About the Research Evaluation Exercise 2015:

The research evaluation of the Institutes of the CAS for the period 2010-2014 will focus on individual *assessment units* within the Institutes; each assessment unit will be evaluated by one of 13 *Field Panels* (Phase I) or review *Commissions* (Phase II) established specifically for the purposes of this exercise according to particular OECD Fields of Science and Technology (FOS) (listed in *Annex 1*).

The Research Evaluation Exercise will consist of two phases. In Phase I, international evaluators will assess limited number of research outputs submitted by *assessment units* to 13 Panels. In Phase II, the Commissions, set up for the same 13 fields (specified in Annex 1) as Panels for Phase I, will assess the Institutes as well as their teams (assessment units) from the points of view of quality, relevance and vitality.

**In Phase II**, the Commissions, set up for the same 13 Fields as Panels for Phase I, will assess the Institutes as well as their *assessment units* in terms of quality, relevance and vitality.

Each Commission will be headed by a Chair and will include foreign experts, preferably the Panel Members from Phase I of the evaluation, as well as Czech nationals. Commission Chair, Deputy Chair and Commission Members will have to claim the absence of any potential conflict of interests (specified in Annex 2). They will be expected to reject the assessment of particular team or Institute, if they feel to be in conflict of interest. These Commissions will assess, on the basis of relevant documents provided by the Management, the Institutes as well as their teams (assessment units) from the following points of view:

- a) **Quality of the results**. To this aim quality profiles from Phase I will be complemented by detailed bibliometric information on the complete list of outputs and the specification of the contribution of the assessment unit members to them.
- b) **Societal (economic, social and cultural) impact of the research** taking into account
  - Educational activities
  - Collaboration with business sector
  - Outreach and editorial activities
  - Research services (libraries, databases, collections, infrastructures).
- c) **Involvement of students in research**.
- d) **Position in international as well as national contexts** reflecting the

- Scientific reputation and visibility in international comparison
  - Ability to attract foreign researchers
  - Comparison with other similarly oriented institutions in the Czech Republic.
- e) **Vitality and sustainability** determined by
- Funding (structure of resources, effectiveness of research)
  - Management (organizational structure, methods of hiring, career system)
  - Employees (age and qualification structure, mobility)
  - Success in grant and project applications.
- f) **Strategy for the future**.

In all these aspects, assessment will be based on good international practice and made in reference to practices at similar international research institutions. Phase II of the evaluation will include the onsite visit by the Commissions in autumn 2015.

The onsite visit of the Institute by the Commission will include

- a) Presentations of individual teams by their leaders
- b) Presentation of the Institute by its Director
- c) Meeting with the Institute Council
- d) Meeting with the Director of the Institute
- e) Visit of laboratories and research infrastructures (optional).

The detailed programme of the onsite visit will be agreed between the Commission Chair and the Director of the visited Institute. After completion of this phase the Commission will work out the **Final Report**, including the set of recommendations on the Institute as well as on its teams, to be finalized by the end of 2015. The Final report will cover both Phases of the evaluation and will contain, for the Institute as well as its teams:

- Written statements on all the above aspects a)-f) of the evaluation,
- Summary with recommendations,
- Statement of the Director of the Institute on the Final report.

The Commissions will be provided by the Management with a template of the Final Report. In the case different assessment units from an Institute will be assigned to several Fields, the procedure for Phase II of the evaluation, as described above, will apply to each of the relevant Commissions.

Phase II of the evaluation will take place in the period September 1, 2015 – January 29, 2016.

## Annex 1 – Classification

Main Field no.	FOS no.	Main Field/Field of Science and Technology (FOS)	Panel/ Commission
<b>1</b>		<b>Natural sciences</b>	
	1.1	Mathematics	<b>1</b>
	1.2	Computer and information sciences	<b>2</b>
	1.3	Physical sciences	<b>3</b>
	1.4	Chemical sciences	<b>4</b>
	1.5	Earth and related environmental sciences	<b>5</b>
		Biological sciences	
	1.6B	<i>Biochemistry and molecular cell biology, biophysics, virology, ...</i>	<b>6</b>
	1.6O	<i>Biological sciences including biotechnology and agricultural sciences</i>	<b>7</b>
<b>2</b>		<b>Engineering and technology</b>	<b>8</b>
	2.2	Electrical engineering, electronic engineering, information engineering	
	2.1, 2.3	Mechanical and civil engineering	
	2.4	Chemical engineering	
	2.5	Materials engineering, materials science and nanotechnology	
	2.6	Metrology and diagnostic methods	
<b>3</b>		<b>Medical and health sciences</b>	<b>9</b>
	3.1	Basic medicine	
	3.2	Clinical medicine	
	3.3	Health sciences	
	3.4	Medical biotechnology and medical engineering	
<b>5</b>		<b>Social sciences</b>	<b>10</b>
	5.1	Psychology	
	5.2	Economics and business	
	5.4	Sociology	
	5.5	Law	
	5.6	Political science	
	5.7	Social and economic geography	
<b>6</b>		<b>Humanities</b>	
	6.1	History and archaeology	<b>11</b>
	6.2	Languages and literature	<b>12</b>
		Humanities excluding 6.1 and 6.2	<b>13</b>
	6.3	Philosophy, ethics and religious studies	
	6.4	Arts (arts, history of arts, performing arts, music)	
	6.5	Other humanities	

## Annex 2 – Conflict of Interests

### **Definition of the conflict of interests for Reviewers – Head of Panel, Commission Chair and Deputy Chair, Panel Member, Commission Member and Evaluator:**

For the Research Evaluation Exercise 2015, held by the Czech Academy of Sciences, a conflict of interests exists if a Reviewer:

- (a) Was involved in the preparation of/is co-author of the outputs and/or results to be evaluated (applies to Evaluators only),
- (b) Has close family ties (spouse, domestic or non-domestic partner, child, sibling, parent etc.) or other close personal relationship with any person, who is co-author of the outputs and/or results to be evaluated and who is from the assessment unit to be evaluated, or with the head of assessment unit to be evaluated or with any person representing legal entity to be evaluated,
- (c) Is in any way involved in the management of any legal entity to be evaluated,
- (d) Is employed or contracted by any legal entity to be evaluated,
- (e) Has or has had a relationship of scientific rivalry or professional hostility with any co-author of the outputs and/or results to be evaluated or with the head of assessment unit to be evaluated,
- (f) Has or has had in the past, a mentor/mentee relationship with any co-author of the outputs and/or results to be evaluated who is from the assessment unit to be evaluated, or with any person from the legal entity or assessment unit to be evaluated.

Coordination Board, upon notification from the Reviewer, will decide whether a conflict of interest exists if any other situation (e.g. joint projects) appears that could cast doubt on the Reviewer's ability to participate in the evaluation impartially, or that could reasonably appear to do so in the eyes of an external third party.

If it is revealed during an evaluation that a Reviewer has knowingly concealed a conflict of interest, the Reviewer will be immediately excluded. Any panel decision in which s/he has participated will be declared null and the output(s) and/or result(s) concerned will be re-evaluated.

# Evaluation of the Research and Professional Activity of the Institutes of the CAS for the period 2010–2014

## Appendix 7.1 – Final Report

---

### Final Report on the Evaluation of the Institute

**Name of the Institute:**

**Fields, in which the Institute registered its teams:**

Observer for the CAS:

Observer for the Institute:

**Commission (1):**

chair:

date of the visit of the Institute:

programme of the visit of the Institute:

evaluated teams:

**Commission (2):**

chair:

date of the visit of the Institute:

programme of the visit of the Institute:

evaluated teams:

etc.

**A. Evaluation of the Institute as a whole**

**Commission (1):**

**1. Introduction**

**2. Strengths and Opportunities**

**3. Weaknesses and Threats**

**4. Recommendations**

**5. Detailed evaluations**

*Declaration on the quality of the results and share in their acquisition*

*Declaration on the involvement of students in research*

*Declaration on societal relevance*

*Declaration on the position in the international and national context*

*Declaration on the vitality and sustainability*

*Declaration on the strategy and plans for the future*

**Commission (2):**

**1. Introduction**

**2. Strengths and Opportunities**

**3. Weaknesses and Threats**

**4. Recommendations**

**5. Detailed evaluations**

*Declaration on the quality of the results and share in their acquisition*

*Declaration on the involvement of students in research*

*Declaration on societal relevance*

*Declaration on the position in the international and national context*

*Declaration on the vitality and sustainability*

*Declaration on the strategy and plans for the future*

etc.

**B. Evaluation of the individual teams**

**Evaluation of Team 1**

**1. Introduction**

**2. Strengths and Opportunities**

**3. Weaknesses and Threats**

**4. Recommendations**

**5. Detailed evaluations**

*Declaration on the quality of the results and share in their acquisition*

*Declaration on the involvement of students in research*

*Declaration on societal relevance*

*Declaration on the position in the international and national context*

*Declaration on the vitality and sustainability*

*Declaration on the strategy and plans for the future*

**Evaluation of Team 2**

etc.

**C. Declaration of the observers, representatives of the Czech Academy of Sciences on the course of Phase II of the evaluation**

**D. Declaration of the director of the Institute on the course of Phase II of the evaluation and evaluative report**

## Evaluation of the Research and Professional Activity of the Institutes of the CAS for 2010–2014

### Appendix 7.2 – Timetable

Activity	From	By
List of names of the team's researchers	01 Jan 2015	31 Jan 2015
Presentation of the outputs for Phase I	01 Jan 2015	19 Feb 2015
Brief comment on the presented outputs	01 Jan 2015	15 Mar 2015
Check of the bibliometric data	10 Mar 2015	20 Mar 2015
Securing of access to the full texts of the presented outputs	01 Jan 2015	31 Mar 2015
Full text of the application	01 Jan 2015	30 Apr 2015
Implementation of Phase I	01 Apr 2015	30 June 2015
Presentation of the report on the course of the evaluation to the Academy Council of the CAS		14 July 2015
Implementation of Phase II	01 Sept 2015	31 Dec 2015
Lodging of objections to the Final Report	01 Jan 2016	22 Jan 2016
Settlement of the Institutes' objections	23 Jan 2016	15 Feb 2016
Final statements of the Institutes	16 Feb 2016	29 Feb 2016
Presentation of the summary report on the evaluation to the Academy Council of the CAS		15 Mar 2016
Presentation of running information on the evaluation to the Academy Assembly of the CAS		2016 spring session of the Academy Assembly
Presentation of the summary report on the evaluation to the Academy Assembly of the CAS		2016 autumn session of the Academy Assembly