



**IUPAC**  
**Chemistry and Human Health Division**



**IFCC**  
**Scientific Division**

**Subcommittee/Committee on Nomenclature, Properties and Units (SC/C-NPU)**

Draft minutes for the meeting in Corfu, Greece, 2010-04-16–17

Item

1. The meeting was opened April 16<sup>th</sup> at 9:00 Dassia Chandris Hotel in Corfu, Greece. Françoise Pontet, chair of the committee welcomed the participants.
2. A draft agenda was restructured and approved.
3. The draft minutes from the last meeting, in Glasgow, Scotland 2009-08-03–04 was approved.
4. Committee members, working group members, corresponding members, and IUPAC project members were welcomed.

The five titular members of the IFCC committee; Françoise Pontet (FP), Ulla Magdal Petersen (UM), Ivan Bruunshuus Petersen (IB), Xavier Fuentes-Arderiu (XFA) and Robert Flatman (RF).

The new titular member Robert Flatman, chair of an Australian LOINC-committee, and with interest in the use of SNOMED CT, and Dongchon Kang (DK), member of the Silver Book working group, with a special knowledge in enzymology, gave short introduction of themselves and were specially welcomed.

Georges Ferárd (GF), chair of the Silver Book working group.

René Dybkaer (RD), IFCC Consultant and IFCC corresponding member Helle Johansen (HJ).

Gunnar Nordin (GN), IUPAC project member, acts as a secretary for the meeting for item 1 – 20. RF secretary for item 21-31.

It was noted that IB leave as titular member by 2010, and a new member should be recruited. With respect to the existing competence among the committee and project members it was mentioned that a future member with experiences from e.g. immunology and allergology might be valuable.

It was also noted that FP will end as chair of the committee by 2011.

Apologizes were presented for Urban Forsum, Clement McDonald (CMD, Silver Book working group), Gilbert Hill (GH, Silver Book working group), and Daniel Karlsson (DK, corresponding member and chief terminologist).

5. The budget for the meeting was presented by FP. IFCC and IUPAC share the cost for the meeting.  
The committee which has been evaluated to “2.23” on a 0 – 3 scale by IFCC SD, has been attributed a budget of 10 000 CHF from IFCC.
6. Next C-NPU meeting was decided to be held in Linköping, Sweden at 2010-10-17–19.
7. It was reported that RD's book “An Ontology on Property - For Physical, Chemical and Biological Systems” now is available at <http://ontology.iupac.org/>. However, the introduction of the author currently provided at the website is “embarrassing and incorrect” says RD. Henrik Olesen is informed and has promised to correct the introduction. According to the plan the book should also be available through the IFCC web page. FP will provide the file to IFCC secretariat and SD Chair so that IFCC Publication Division can create a downloadable function as well.

8. Reports from members.

RD reported from JCGM-WG1 (GUM) and the ongoing projects.

FP, the IFCC delegate in WG2(VIM) reported that the current works concerns how detected errors in VIM3 should be corrected. Corrigenda sheets have been prepared for the three, differently, published versions.

IUPAC Division Committee met in March 2010 in Copenhagen. FP reported. The committee was reminded that IUPAC might sponsor presentations given by C-NPU intellectually. Douglas Templeton should be contacted in advance. There will be no funding for book selling for the Division, e.g. for the revised Silver Book.

During the meeting FP was addressed with a comment regarding the C-NPU use of the term "element"; "glucose cannot be an element". C-NPU use the term "element" in short for "elementary concept", "code element" and elements in a set, and thus not exclusively for "chemical element". However, we should be aware of the confusion this might create, and if possible find suitable alternatives for the use within context of chemistry, health science and information terminology.

9. Report from the Silver Book revision working group

GF chairs the revision project, which currently also meets in Corfu. Project members are CMD, FP, GH, KD, RD, and XFA. IB is specially invited to the meeting in Corfu.

The aim of the project is to update and improve readability of the Silver Book. Currently under discussion are chapter 6 "Requesting, generating, and transmitting clinical laboratory data" and chapter 8 "Kinds-of-quantity of dimension one; SI unit 1".

Furthermore it remains to be decided on the inclusion of the nominal and ordinal kind-of-properties.

The principles of spelling of substance names "creatininium" and "adrenalinium" are still under discussion.

Another issue still under discussion is which principles should be used in the selection of special characters, e.g. the "." or "superior dot", for the text. A possibility is to refer to symbols defined in ISO 80000, or to characters within the Unicode character set. It is important that the text safely not only can be printed, but also published correct on the web.

Examples of properties cited in the book should either be from the NPU database or, for examples outside the content of the database, strictly follow the same syntax.

Examples might also be included, for comparisons, from other sources such as LOINC and CUMUL. A section describing LOINC and CUMUL might also be included at the end of chapter 6 as "alternative systems". An author is searched for this part.

XFA remarked that examples from other systems must not be misinterpreted as a promotion of LOINC.

Use of NPU codes in laboratory reports should be described. The international nature of the NPU system should be stressed. A question was raised why a description of SNOMED CT is not included in the Silver Book.

A draft version of chapter 8 has been prepared by CMD and GH, which has been corrected by RD.

A prolonged project time (e.g. March 2011) should be asked for at both IUPAC (Douglas Templeton and Fabienne Meyers) and IFCC (Ellis Jacobs). The main argument for the project to prolonged is that nominal examinations cannot be included until the project on vocabulary of nominal examinations has been finished.

Nominal and ordinal scale examples incorporated in an existing chapter. The time is not available for a full chapter.

For the bibliography primary and secondary sources will be separated, as done in the IPUAC Green book. It was noted that the revision will not follow the color books completely.

10. Manuscript on Vocabulary on Nominal Examinations, circulated by GN (IUPAC project

2004-023-1-700).

Draft 1 was circulated in January 2010. A draft 1.2 was sent in March to IFCC and comments are expected.

IB asked if an examination can be 'nominal' and suggested that a more correct wording might be examination of "nominal properties".

XFA discussed the distinction between the terms "quantity", "kind-of-quantity", "dedicated kind-of-quantity" and "instance of a dedicated kind-of-quantity" respectively. These definitions must be checked carefully throughout the document.

The expression "[No value]" used in some entries should be replaced by "[Empty]". The elements of a set should always be described within into curly brackets.

Dead line for draft 2 to IFCC is May 10<sup>th</sup>.

It was noted that the wording of the definition of 'system' was taken from the Silver book, and not from ENV1614, which quotes Dybkaer 04.

A suggestion was made that we should engage a statistician for review and possible contribution.

(After the meeting GF nicely contacted a Belgian statistician, Adelain Albert, who unfortunately declined due to lack of time.)

11. The IHTSDO and IFCC-IUPAC (C-NPU) project.

(IUPAC project 2006-008-1-700). The meeting with the stakeholders in Bethesda, Md, USA October 2009 was encouraging. According to rumours documents have been sent to lawyers, and negotiations have proceeded with LOINC – but currently no news seems to be available regarding the NPU-negotiations. There will be an IHTSDO meeting in 2 weeks, were the remodelled observable axis according to the NPU will be discussed. DK, the NPU chief terminologist is expected to participate.

12. Manuscript on the NPU terminology, "Properties and Units in the Clinical Laboratory Sciences Part XXIII. The NPU Coding System. (Recommendation)" circulated by UM (IUPAC project 2006-012-1-700).

The title of the document was discussed. XFA suggested that this paper, being a review, should be outside the series. That the paper is an update, review or user guide should be explained in the foreword, as well as the relation to paper nr XIII in the series.

Other suggestions were to ad "nomenclature" (GF) and "principles and implementation" (RD) to the title. UM pointed out the paper deals with the implementation of the 'terminology', not of the 'system' as such, which is the framework of the terminology.

If the document should be a "recommendation" it has to follow the necessary technical procedure throughout the IFCC and IUPAC.

Some details in the manuscript were shortly discussed, e.g. the concept 'pauciscale' as a restriction of any type of scale. UM explained that if the use of 'pauciscale' is limited to just ordinal scale, the concept can be abandoned. Comments to this and other details in the manuscript to UM within one month from now July 1st.

13. FP reported from the meeting with SD-EC held this morning April 17<sup>th</sup>.

A meeting with the IFCC Publication Division is scheduled to April 18<sup>th</sup> for discussion of the publication of the NPU system on the IFCC web site. The meeting will be summarized by FP to SD chair Mauro Panteghini (see Annex to these minutes).

Regarding the status of the IHTSDO negotiations SD agreed to contact Howard Morris primarily, and IHTSDO secondarily.

FP is suggested to replace RD as IFCC representative in BIPM-CCU (Comité Consultatif des Unités). As FP will retire by 2012 she is not willing to accept the proposal.

After discussions the C-NPU suggests GF for the position as CCU representative.

According to information from EC (through an ISO-REMCO representative) ISO

prepares a standard on reference materials for nominal properties. The ISO-REMCO representative of the IFCC SD asked FP whether it would be possible to communicate Draft 1 to his organisation. FP accepted with confidentiality clause and Mauro Panteghini will contact the ISO-REMCO representative of the SD for asking for the draft prepared by ISO-REMCO in return.

14. The NPU database on the IFCC web site and the management of the international NPU terminology.

FP reminded that it was promised during the IFCC meeting in Antalya 2008 that the NPU terminology should be accessible from the IFCC web site within 18 months. Due to problems with IFCC web-site the promise is still not fulfilled.

The management of the international terminology system is currently executed by the Danish Board of Health, informally on behalf of IFCC and IUPAC. No contract or formal agreement exists which regulates the responsibilities of the stakeholders.

The resources available within the Danish Board of Health are currently very limited. For this reason documentation of the work is insufficient, and no questions from the users are filed.

The National Release Centers in Denmark and Sweden now provide the Health Care systems in Denmark and Sweden with NPU codes, and to an increasing degree also systems in Norway.

A business plan has to be developed and the management of the international system, and of the National Release Centers need to be formalized. A possible interest for collaboration between Danish Board of Health, the Swedish Board of Health, a Norwegian body such as KITH, and IUPAC, IFCC, was briefly mentioned.

The limited use of the system outside Scandinavia is a basic problem. Much of the discussions in C-NPU are therefore restricted to "Scandinavian problems". The impact of the system even within the IFCC is limited. It was however concluded, that when the system is published on the IFCC website it will attract more users.

15. The lack of definitions for hitherto non-referenced terms in the NPU system.

UM presented the problems regarding the approximately 3 000 formally undefined concepts in the system. One example is the stock notation of chemical elements.

It was suggested to initiate a project with a few persons, e.g. GN, UM, RF, IB. (GF also volunteered after finalizing the Silver Book revision project) with the purpose of finding proper definitions to the non-referenced terms.

As possible referees for a project of defining undefined concepts were mentioned Anders Kallner, Peter McNair, Gilbert Hill and Matthew McQueen.

RD reminded that the project have to comply with the rules in ISO 704 for terminology work.

16. Review of the Monday 18<sup>th</sup> workshops.

FP suggested that attendees provide brief report back to the rest of the committee.

17. Revision of the urinary calculi manuscript. Properties and units for urinary calculi (IUPAC project 2001-070-1-700).

GN is a new chair of the project. The project, however is no more financed as the remaining budget for the old project was lost by 2009. So it was a "priority project" to receive extra funding by Div VII at the end of 2009 (approx. 800 USD). GN will address a Swedish urologist for contribution to the work.

18. Structure of results from genetic testing.

Pedro Alia presented the current NPU terminology at an AACC meeting in Copenhagen October 2009.

The codes within this area are not very well developed. The National Release Centers receive frequent requests for new codes. A project is needed for the further development. Pedro Alia has already accepted to be a member of a project group. Other possible project members were discussed.

A possible cooperation with the IFCC molecular biology committee, the ongoing project under Mario Pazzagli, and the Human Genom Variation Society was also discussed.

It was decided that GN should address Mario Pazzagli and introduce FP. FP writes to Mauro Panteghini on behalf of C-NPU with a suggestion for cooperation between all the concerned IFCC bodies (C-NPU and C-MD).

UM informed that the term "Inborn Error of Metabolism" (IEM) has been changed to "Molecular biology and genetics" (MBG) in the NPU database. The term is used for classification of properties with the database. In the revised Silver Book the terms "Clinical Molecular Biology" or "Clinical Molecular Genetics" will be suggested.

19. Code source for taxonomy of bacteria.

ATCC has been shown to be an unreliable source for names of prokaryotic organisms. UM has already started to use NCBI (<http://www.ncbi.nlm.nih.gov/guide/>) in place of ATCC for some bacteria names. It was decided that we should continue to refer to NCBI in the database. A complete replacement of code sources for bacteria has to wait until a full management organisation is in place.

20. Code source for definition of proteins.

Most proteins have currently reference to MeSH. It was agreed to refer to UniProt for new proteins. The replacement of all old references for proteins will be a heavy task and a might be organized in a future new project.

21. Code source for allergens.

In a e-mail discussion prior to the meeting, it has been suggested that the current references to NCCLS for allergens in the database should be replaced with reference to I.U.I.S., where possible.

It was now decided that where necessary it should be allowed to refer to I.U.I.S. No decision was made to completely replace old codes. The granularity of allergen properties needs a more thorough discussion. In any case the laboratory should specify the vendor of the allergy test used.

22. UMLS and status as reference terminology.

The UMLS is a secondary reference terminology. Only primary code sources should be preferred as references in the NPU system.

23. Database promoting (IUPAC project 2006-048-2-700).

Various suggestions for promoting of the database were discussed. A good opportunity to promote the database and the terminology system could be in the form of a workshop in conjunction with next IFCC General Conference.

As the chair of the project, FP, will retire in early 2012: a new chair will be required for the new project.

24. How to report on test strips? António Rebelo has posed a question regarding the most correct form to report result for e.g. haemoglobin in urine; +, ++, +++, etc or mg/dL?

For haemoglobin in urine the NPU system currently holds one entry for the arbitrary concentration, or "+, ++, +++":

NPU04208 U—Haemoglobin; arb.c.(proc.) = ?

For results on a rational scale, the term "pauciscale" has been introduced to denote a rational scale with only a few possible values. For e.g. haemoglobin concepts are described as substance concentration. Thus

NPU02323 U—Haemoglobin(Fe); subst.c.(pauciscale; proc.) = ? nmol/l

In the following discussion it was concluded that test strips are of various kinds, some give results on an ordinal scale (yes/no), other on ratio scale. Therefore it depends on the type of strip how the result should be coded.

FP will compose a proposed answer to the query and submit to the committee.

25. Use of local codes together with NPU codes.

Local codes are created to cover concepts in use in the local laboratory community, but are not defined within the NPU terminology. An example of a non-defined concept is mass concentration of haemoglobin. Of the total number of codes necessary to report standard laboratory results, Swedish laboratories use approximately 5% of locally defined codes. Such codes will create problems data are communicated internationally.

The further discussion was postponed.

26. NPU codes for eGFR.

Laboratories increasingly report glomerular filtration rates estimated by various algorithms based on measurements of concentration of creatinine or cystatin C. In lack of internationally agreed definitions of these algorithms, locally defined codes are recommended.

27. Stock notations in the database.

Discussion postponed to next meeting.

28. On reporting of the ratio "BUN to creatinine" in plasma. A query from Selma Farrell, ICON Central Laboratories.

The concept BUN (Blood Urea Nitrogen) is not defined in the NPU database, but the substance concentration of urea, with the preferred term "carbamide", and the substance concentration of creatinine, with the preferred term "creatininium", are defined. The substance ratio carbamide/creatininium is defined in the following way:

$$\text{NPU27132 U—Carbamide/Creatininium; subst.ratio} = ? \times 10^{-3}$$

Mass concentrations for BUN, carbamide and creatininium are not defined in the system. These concepts, together with mass ratio carbamide/creatininium or BUN/creatininium must therefore, if necessary for reporting, be defined by local codes.

The preference for the terms "creatininium" and "carbamide" does not exclude the local use of other terms, such as "creatinine" and "urea" for the same concepts.

29. A possible project for "superordinate concepts".

VIM3 deals with measurements and define concepts such as 'kind-of-quantity'. In the project "Vocabulary on Nominal Examinations", concepts such as 'nominal kind-of-property' defined. However, definitions for superordinate concepts, like 'kind-of-property', are still lacking. The discussion of a possible new project for these superordinate concepts was postponed to another meeting.

30. Kinds of Property for Histological Examinations.

The discussions were postponed for next meeting.

31. Miscellany

32. The meeting closed at 18:20 Saturday 2010-04-17.

Next meeting will be October in Linkoping

[GN 2010-05-15, RF took the primary notes item 23-32]