



IUPAC
Chemistry and Human Health Division



IFCC
Scientific Division

Committee – Subcommittee on Nomenclature for Properties and Units (C-SC-NPU)

Draft minutes for the meeting in Paris 2009-04-26 – 28

Item

1. The meeting was opened on April 26th at 1:00 p.m. at Hôpital Lariboisière, Paris, and the members present were welcomed by the chairperson.

Members present members: Françoise Pontet (FP), Gunnar Nordin (GN), Gunther Schadow (GS), René Dybkær (RD), Ulla Magdal Petersen (UMP), Urban Forsum (UF), and Xavier Fuentes-Arderiu (XFA), corresponding members Helle Møller Johannessen (HMJ) and Georges Férard (GF), and invited expert Henrik Olesen (HO).

Apologies were presented for Ivan Bruunshuus Petersen (IB), Daniel Karlsson (DK) and Jarkko Ihalainen (JI).

In addition apologies were presented for the Silver Book revision TGM, Dongchon Kang (KD), Clement McDonald (CMD) and Gilbert Hill (GH), because of budget shortage.

2. The draft agenda was approved.
3. The minutes from the previous meeting in Uppsala 2008-10-23 – 25 were approved, and will be filed appropriately.
4. IFCC members, corresponding members and IFCC liaison.

It was welcomed by the committee that the position as chair of C-NPU has been renewed for FP for the period 2009 01 – 2011 12.

The titular membership for XFA has been renewed for a second term 2009 01 – 2011 12.

UMP is new titular member, first term 2009 01 – 2011 12 and replaces thereby Daniel Karlsson, who stepped out as IFCC titular member after his first term. DK remains an IUPAC project member.

JI has announced his intention to step out as titular member (second term 2008 01 – 2010 12). The Finnish Society for Clinical Chemistry will be proposed to elect JI as corresponding member of the C-NPU.

The following new corresponding members have been confirmed by the respective national societies: Helle Møller Johannessen (Denmark), Georges Férard (France, also co-chair of the Silver Book revision project), Jens Gleditsch (Norway), and Valentina Koloska (Macedonia).

The Swedish Society for Clinical Chemistry is suggested to propose Daniel Karlsson as corresponding member.

In the discussions HO also proposed that an Arabic corresponding member should be searched for, e.g. from Syria.

Ian Young, IFCC SD vice chair, has replaced Howard Morris as the contact person for C-NPU in IFCC-SD. Howard Morris remains as our liaison for the IHTSDO project.

5. Budget for the meeting.

All of the participants had received claim forms from either IFCC or IUPAC. Expenses should be claimed within 1 month, in paper form to IFCC or electronically to IUPAC, with copies to FP and Douglas Templeton, IUPAC div VII.

6. Next SC-C-NPU meeting will be held in conjunction with the 42nd IUPAC Congress in Glasgow, August 2009. The schedule will be as follows: IUPAC Nominal project 2004-023-1-700 (now 2008-019-1-700) August 2nd (Sunday), SC-C-NPU August 3rd – 4th (Monday – Tuesday) the IUPAC Silver Book Revision Project August 5th – 7th (Wednesday – Friday).

Members were reminded to fill in the participant questionnaire for the congress at the IUPAC website and make their hotel reservations as soon as possible.

7. The René Dybkær's book "An Ontology on Property for physical, chemical, and biological systems", based on his thesis from 2004, is expected to be ready for publication soon, after a few formatting problem have been solved. UF will arrange for the web-publication.

8. The IHTSDO and IFCC-IUPAC (C-NPU) activities and IUPAC project 2006-008-1-700).

The International Health Terminology Standards Development Organisation (IHTSDO) is responsible for the development of SNOMED CT. In order to improve the laboratory terminology in SNOMED CT a joint project between IHTSDO, LOINC and NPU has been initiated by IHTSDO. The engaged parts, that is IHTSDO, Regenstrief Institution (for LOINC) and IFCC – IUPAC (for NPU) met in Bethesda Washington February 26th – 28th 2009. A 6 month trial project (April – October) was agreed upon, during which 600 properties with codes should be studied (400 LOINC and 200 NPU). The IFCC – IUPAC was represented at the negotiations by FP, UMP, Howard Morris and Joycelyn Hicks (IFCC past president).

DK is appointed for the role of 'chief terminologist for NPU within this project.

The project has been announced with a special press release.

The trial project was presented for C-SC-NPU by UMP.

FP showed a draft "List of common points between NPU, LOINC and SNOMED CT" which IFCC SD has asked for.

IFCC has earlier provided 6 000€ for the project. A project proposal has been prepared by UF and DK and has been presented to IUPAC, who received positive review comments. In order to be accepted, however, an improved dissemination plan has been asked for. UF will contact Fabienne Meyers at the IUPAC office for the further process, and refer to the press release and a planned publication of the outcome.

Post meeting note : the project is finally accepted.

XFA expressed fear that the goal of the trial project might not be reached.

9. Manuscript on the updating of NPU terminology.

A draft and milestones for a paper has been prepared by UMP and IB. The next version to be circulated within the Committee before April 30, commented before May 31, and submitted to IUPAC Div VII before June 30, in order to be discussed at the Glasgow Division Committee meeting (July 31-Aug 1).

10. Project for Nominal properties (IUPAC project 2004-023-1-700, now 2008-019-1-700).

A list of already defined terms was compiled by GN, for discussion. RD reminded that super ordinates should not be forgotten.

11. Securing and structural updating of information in the NPU coding system and

its environment (IUPAC project 2006-012-1-700).

The Danish “User manual” for the NPU system has been translated into a draft manuscript in English by HO. In the discussion of the paper HO suggested that *definitions* should be given in italic when first entered, and a list of abbreviations and a bibliography should be added as well.

Deadline for comments to the manuscript is June 1st.

The best way to publish the paper was discussed. One possibility is to publish the paper as a supplement to PAC, and if possible make the document available on both the IFCC and IUPAC web sites. The publication issues will be addressed at the coming Glasgow meeting.

Currently EQUALIS act as the local Swedish Release Center for the NPU codes, after translation of the terms into Swedish.

No decisions have been made so far regarding the structure of the coming NPU database content at the IFCC web site. An agreement is therefore needed with IFCC. It is e.g. essential to know if the structure will fit the current “Labterm format” which is in use at the Danish Board of Health. FP will address Ellis Jacobs, IFCC Communications & Publications Division, asking for a time table and suggestion for a way further.

12. The joint IFCC – IUPAC Silver Book Revision project. The project is chaired by GF with the project members CMD, FP, GF, GH, KD, RD, and XFA.

GF gave a presentation of the status of the project. It has been decided to keep the basic structure of the book as it is. A tandem responsibility for each chapter has been selected among the project members.

The object is to correct errors and to update all the recommendations and to include a new chapter on nominal properties, thus enlarging the scope to cover the whole field of clinical laboratory sciences.

A second object is to increase the readability to make the content easier to understand. An introduction will be given to each chapter and more examples will be given to illustrate the different entries. The possibility to include ‘links’ within the text is discussed.

A bibliography will be presented in two parts; references and a secondary bibliography.

A short information about the project has been published in the Chemical International and will be published in the IFCC news. Information in other contexts is welcomed.

The revised Silver Book will probably be printed and published on line.

A first project meeting was organised in Paris in the fall of 2008, a second meeting is scheduled in Glasgow. The first draft of the revised Silver Book is planned to April 2010.

13. Promoting of the NPU database (IUPAC project 2006-048-2-700).

As an attempt to reduce the gap between scientific metrology and practical use of metrology GF has promoted the use of NPU terminology in France. FP and Claude Giraud, (BioRad) participate in a French group which presents a ‘digest’ from international publications, e.g. VIM3, for the French audience. This group may also be involved in promoting the NPU system.

The French version of NPU is not yet published on the website of the French Society of Clinical Biology (SFBC).

Two posters are planned for the IUPAC congress in Glasgow. One of them will have the title “Health informatics: the NPU coding system”. The submitted abstract contains examples with description of substance concentration of glucose in several languages, including Arabic. It was noted that all short and long terms must be checked for the final version of the poster. The future expectations and evolution of the system should also be addressed in the

poster. The standards ISO 17025 and 15189 could be referenced.

FP will prepare the “NPU Subcommittee” report for the GA. Some items to be covered could be a) IHSTDO, b) the extension of the subject field with examples from pharmaceutical and analytical science, c) arbitrary units, d) the information model or, preferably, the logical model of NPU. Data needed to be forwarded to FP pretty soon.

The planned presentation for The Medical Informatics Europe (MIE) Conference in Sarajevo August 30 - September 2nd was revised. It was suggested that the reason for the development of the system should be explained, and that alternative coding schemes (e.g. CUMUL, Reed, Euclides, Finnish Coding System, LOINC) could be commented.

The presentation could be illustrated with more examples. It might also be useful to illustrate how the codes can be used within the HL7 or Edifact structure of an electronic message.

GN is invited to give a presentation on NPU at the NML Congress in Visby, Sweden September 9th - 11th

FP and UM are invited to give lectures at the Balkan Regional Conference Sept 16 – 19th (the 17th meeting of Balkan Clinical Laboratory Federation and 5th meeting of Macedonian National Congress of Medical Biochemists).

14. Fund raising for the work with NPU.

The committee has small short term funding from IUPAC and small yearly funding from IFCC.

The possibilities to seek governmental support from Denmark and Sweden were discussed, together with possibilities for EU funding.

The NPU system should also be of interest for LIS vendors, and for IVD producers. The challenge is how to make a business case of the system. GF might ask EDMA (through Claude Giraud at BioRad) for some advice.

Post meeting note : Claude Giroud answered that there is no chance to get money from EDMA nowadays.

15. Structure of results from genetic testing in the NPU system.

The current policy allows for definition of codes for individual genes, but not for specific allelic variants or other variations as properties in the NPU database. Neither is mitochondrial DNA covered.

Differentiated NPU codes in cytogenetics is also lacking in NPU. The International Standing Committee on Human Cytogenetic Nomenclature has recently published an updated version (2009) of an International System for Human Cytogenetic Nomenclature (ISCN), as a Recommendation, which is published in collaboration with 'Cytogenetic and Genome Research'.

Ian Young, IFCC SD, has also raised the question if C-SC-NPU is interested in cooperation with C-MD, which was definitely agreed by C-SC-NPU.

A new project might be needed for the development of the NPU nomenclature in the field. The recently proposed HL7 structure of reports in molecular biology suggested by LOINC is also worth considering. Pedro Alia Ramos, one of the co-authors of the original NPU paper in molecular biology, might be interested to contribute.

It was decided that XFA should discuss these matters with Pedro Alia Ramos and that FP address Ian Young with the answer that we are committed for collaboration with C-MD.

NPU is invited to present the current status of the nomenclature in Copenhagen at the AACC meeting “Molecular Pathology Essentials: Diagnosis and Targeted” October 1st – 2nd. XFA will forward the invitation to Pedro Alia Ramos.

16. Database house-keeping issues in #16 – 21
CAS is currently used as an important code source for terms for chemical substances in the NPU database. The suitability to replace CAS codes with IUPAC International Chemical Identifier (InChI) codes (<http://www.iupac.org/inchi/>) was discussed. The subcommittee for InChI will meet in Glasgow, and it was decided to contact the SC chair Steven R Heller for more information, prior to the Glasgow meeting, and if possible plan for a joint meeting in Glasgow. FP will initiate the discussions with SC chair Steven R Heller.
17. The current policy for references for the concepts in the NPU database is described in the minutes from SC-C-NPU meeting in 2006-12-03 – 05 (item 29). It is probably not published elsewhere, but it should be included in the Users Guide.
18. On the addition of 'scale type' in the NPU system.
'Scale type' is not part of the definition of a property in the NPU system. Properties with the kind-of-properties 'arbitrary concentration', 'arbitrary substance concentration', and 'arbitrary number' can be either ordinal or rational, which can be clarified with the addition of scale type in the database.
It was decided to add information on scale type in the system, and where needed add scale type as a specification of the kind/of/property. When scale type is added to existing entries this will be an intentional break against the basic rules of the NPU system that a given definition of a property should never be diminished.
19. Element codes not used for any concepts in the NPU database
Several of the coded elements in the system are not actively used to describe any properties. It was decided that these entries should be retired until needed.
20. Enzymes with reference to 'IFCC 1998'
Currently there are 79 concepts in the database concerning enzyme activity with reference to 'IFCC 1998', although the IFCC recommendations for enzyme measurements were not finally accepted until 2002 and 2006 (amylase).
It was decided that the correct year should be cited in the database, and that the entries should be corrected. GN was asked to create a list together with GF.
In the NPU system the term "transaminase" is used, as recommended by IUBMB, instead of 'aminotransferase' as used by the IFCC in the published reference measurement procedures. GF raised the question which term should be preferred in the NPU database. The issue might be discussed on a coming committee meeting.
21. Undefined concepts in the database.
In the NPU database some concepts lack clear definition, e.g. 'I+II' as used for stock notation in e.g. "Mercury(I+II; inorganic)"
It was decided that after the retirement of all unused codes, UM presents a list of remaining undefined concepts in the database. This list has then to be considered by C-SC-NPU.
22. Properties described by algorithms, e.g. "eGFR".
The Danish Society for Clinical Chemistry has suggested a local NPU code in which "DSKB2008" should be referred to in the procedure, equal to the so called MDRD equation (or " $186 \times \text{'NPU18016'}/88,4)^{-1,154} \times \text{'NPU18233'}^{-0,203} (\times 0,742 \text{ if female})$ " in NPU-terms) in order to estimate glomerular filtration rate from the substance concentration of creatinin in plasma, age and gender of the patient.
GN suggested that the algorithm *per se* should not be referred to for the

calculated property, but only the target component, e.g. 'creatinine' or 'cystatine C' in the case of eGFR. The exact algorithm or correction factors might vary from one laboratory to another, and must therefore be specified in the local procedure). No consensus on this was achieved within C-NPU.

C-NPU agreed that we should be very restrictive to embed algorithms in the procedures, with some exceptions, such as 'BMI'. In the discussions it was mentioned that if an algorithm should be embedded as a procedure, it must be dimensionally correct.

23. Is the 'Bethesda unit' a specific unit with dimension and magnitude? The Bethesda unit is referred to in the measurement of the inhibition of coagulation factor VIII. It seems that 'Bethesda unit' is more a description of the procedure and cannot be regarded as a formal unit within the NPU system. The question should be raised with LOINC and IHTSDO during the current trial period for new codes with SNOMED CT.
24. The revised name of the C-SC-NPU, where the comma between "Nomenclature" and "Properties" is replaced by 'for', and the additive "in Laboratory Medicine" is deleted is now accepted by IUPAC.

So, the complete name will be "Subcommittee on Nomenclature for Properties and Units" (SC-NPU), instead of "Subcommittee on Nomenclature, Properties and Units in Laboratory Medicine" (SC-NPU-LM).

Post meeting note : the actual report from the last IUPAC Bureau meeting, received after this C-SC-NPU meeting is as follows :

"Second, our NPU Subcommittee had requested a name change from NPU-LM to "Nomenclature for properties and units". After brief discussion this was approved unanimously, and the SC will henceforth be known as NPU pending ratification by Council at the GA in Glasgow, which should be straightforward."

25. Nomenclature of CD antigens. A possible project for SC-C-NPU. |

A first manuscript has been drafted by XFA and others.

Laurence Boumsell, chairman of Nomenclature Committee of the International Union of Immunological Societies (IUIS) (<http://www.iuisonline.org>) was invited for the meeting as expert in the field.

Dr Boumsell explained that eight "HLDA workshops" had been organized since 1982. The ninth workshop will be organized in Barcelona March 2010. The CD nomenclature (CD1 – CD350) has been developed from these workshops. This nomenclature is mandatory in US (FDA) and for this reason it is also indirectly mandatory in Europe. At future HLDA workshops new reagents for the recognition of CD molecules will be authorized.

The goal of IUIS is to name all cell surface molecules, including blood group substances (of which some already have CD-names). For this reason the restrictive old term 'CD antigens' has been changed to 'CD molecules'. Also the term 'CD', from "cluster of differentiation", has recently been changed to 'HCDM', short for "Human Cell Differentiation Molecules".

The technique to identify cells with specific CD molecules with flow cytometry develops rapidly. It is now possible to simultaneously use up to 17 different color markers for the identification of CD molecules. For e.g. the measurement of CD4 positive cells in blood for HIV diagnosis and treatment 4 different colors are used, and for the validation of leukemia 6 different colors are used.

As the techniques are still developing, it is not possible to know which type of classification will be used in 10 years' time.

It was clarified that the task of SC-C-NPU is to standardize the way a measurement result is reported, by use of existing nomenclatures such as the suggested nomenclature for CD-molecules, and not to invent a completely new nomenclature. For the further work on the C-SC-NPU draft manuscript it was suggested that the chairman of IUIS Standardization Committee should be invited as co-author. The contact will be provided by Dr Boumsell, who also

- promised to review the final version of the manuscript.
26. The calendar for the coming C-SC-NPU activities was reviewed. The C-SC-NPU meeting in Glasgow will be followed by a meeting in conjunction with the IFCC General Conference in Corfu April 2010. UF offered to arrange the committee meeting in Linköping in the fall of 2010. FP
27. Miscellany.
- BIPM arranges a closed workshop this fall on the use of arbitrary units and WHO reference materials for physiological quantities with impact on measurement on temperature, vibration etc. RD is invited as lecturer.
- UMP and HMJ experience a heavy work load for updating the database content. It was ensured that UMP and HMJ are free to address the C-SC-NPU members with any questions regarding new properties in need for further investigations prior to the inclusion of the properties in the database.
- The NPU database needs to be disseminated also to Italy, France and Germany. The promotion of the database through poster presentations and easy to use DVD-presentations was mentioned.
28. The C-SC-NPU was closed by FP on Tuesday 28th 1:00 p.m. The participants thanked FP for a very well organised meeting at Hôpital Lariboisière, Paris.

[GN]