



## **ICP 1.2 Workshop Minutes**

10-11 April, 2006, Prague

Astronomical Institute  
Academy of Science of the Czech Republic  
BOČNÍ II/1401  
Prague 4 – Rožtyly

Czech Republic

**Participants of the meeting:** Wolfgang Bosch, Robert Cunderlik, Herman Drewes, Jan Ferko, Petr Holota, Johannes Ihde, Bill Kearsley, Jan Kouba, Gunter Liebsch, Jaakko Mäkinen, Jan Marsa, Urs Marti, Marcel Mojzes, Laura Sanchez, Zdislav Šima, Viliam Vátrt, Marie Vojtiskova

**Begin:** April 10, 2006, 09:00 a.m.; **End:** April 11, 2006 12:30 p.m.

### **1. Agenda**

**Monday, 10<sup>th</sup> April 2006**

09:30 **Opening**

**Welcome**  
*Zdislav Šima*

**Introduction of participants**

Introduction of workshop  
*Johannes Ihde*

**The role of the vertical reference system in IAG**  
*Hermann Drewes*

11:00 **Conventions for definition of a World Height System (WHS)**

**The tidal system of WHS**  
*Jaakko Mäkinen*

**Conventions for definition of a World Height System (WHS)**  
*Johannes Ihde*

**Information about contributions of other ICP1.2 members, discussion**

12:00 **Parameters of a WHS**

**Mean Sea Surfaces - Determination and Calibration**

*Wolfgang Bosch*

**Empirical determination of the global reference level  $W_0$**

Laura Sanchez

13:30 **Parameters of a WHS cont.**

**Confirmation  $W_0$  developed by SSG GGSA –  
difference between two developed value of  $W_0$**

*Milan Bursa, Viliam Vatr*

**Information about contributions of other ICP1.2 members, discussion**

16:30 End of Day 1

**Tuesday, 11<sup>th</sup> April 2006**

08:30 **Procedures for the realization of a WHS and the worldwide unification of height systems**

**Procedures for the unification of height systems**

*Johannes Ihde*

**Connections of the South American height systems to a unified global vertical reference frame**

*Laura Sanchez*

**Information System for Height Reference Frames**

*Gunter Liebsch*

**Information about contributions of other ICP1.2 members, discussion**

12:00 **Summary, conclusions**

12:30 End of the Workshop

## **2. Actions from the ICP1.2 Meeting Cairns, August 22, 2005**

- Conventions for WHS definition and realization (CVRS, CVRF) – structure and editorial staff

The Conventions for WHS definition and realization (CVRS, CVRF) shall have the a structure following IERS conventions 2003:

### 1. General Definitions and Numerical Standards

#### 1.1 Permanent Tide

(Markku Poutanen)

#### 1.2 Numerical Standards

(Proposed: Milan Bursa, tbd)

### 2. CVRS and CVRF

#### 2.1 Concepts and Terminology

(Johannes Ihde)

##### 2.1.1 Basic Concepts

##### 2.1.2 IVRS

##### 2.1.3 IVRF

#### 2.2 IVRF products

### 3. Relations between IVRS and ITRS

(Johannes Ihde)

### 4. Relations between IVRS and regional and local VRS.

(Johannes Ihde)

- Bibliography  
All member of ICP1.2 WG were asked to inform Johannes Ihde about relevant publications and send him the bibliographic information
- Meta data information system  
BKG will prepare a template for selecting meta data following the content of the CRS-EU information system
- ICP1.2 Workshop in spring 2006, fixed for April 10/11, 2006 in Prague  
Invitation and agenda will followed till end of 2005
- ICP1.2 meeting at GGSM2006 in September 2006 in Istanbul

### 3. Actions of ICP1.2 Prague Workshop

- (1) Position paper WHS and tidal system (JM, 2006/07)
- (2) Terms of definitions e.g. Difference between Height Reference System and Vertical Reference System (HD, 2006/07), best fitting geoid
- (3) Reprocessing the two contrary W0 solutions, exchange the data files, flow chart of the procedures (DGFI and SSG GGSA, 2006/07)
- (4) Description of regional VRS (LS, JI, 2006/07)
- (5) Description of Chart datums (STSH, 2006/06)
- (6) Review VRS conventions V1.1 (JI, 2006/04), distribution to ICP1.2 (2006/05)
- (7) Survey of VRS, Contact to SC 1.3, SC 2.4 (JI, 2006/06)
- (8) Bibliography: All member of ICP1.2 WG were asked to inform JI about relevant publications and send him the bibliographic information (all)
- (9) Meta data information system concept (JI, GL, 2006/07)
- (10) ICP1.2 meeting at GGSM2006 in September 2006 in Istanbul

### 4. Open Questions

- (1) Conventional parameters of VRS  
 $W_0$ ,  $U_0 = W_0$ , GM, a
- (2) Role of PSMSL, TIGA-PP, etc.
- (3) Selection of a conventional GGM
- (4) Relationship to gravity reference frames
- (5) time dependence of IVRS/IVRF

#### Acknowledgments:

Thanks to our Czech colleagues for the excellent organisation and hosting the workshop, especially Viliam Vatrt and Zdislav Sima.

**Keeper of the Minutes:** Johannes Ihde

**Annexes:**

1. ICP1.2 Members
2. Participants of the Workshop
3. Workshop presentations

## Annex 1

### ICP1.2 Members

Amos, Matt	New Zealand
Ardalan, Alireza A.	Iran
Bosch, Wolfgang	Germany
Bruyninx, Carine	Belgium
Bursa, Milan	Czech Republic
Čapra, Alessandro	Italy
Čunderlík, Róbert	Slovakia
Dam, Tonie van	Luxemburg
Demianov, Gleb	Russia
Drewes, Hermann	Germany
Featherstone, Will	Australia
Ferko, Jan	Slovakia
Heck, Bernhard	Germany
Holota, Petr	Czech Republik
Ihde, Johannes	Germany
Jekeli, Christopher	USA
Kasenda, Adolfientje	Australia
Kearsley, Bill	Australia
Klees, Roland	Netherlands
Kouba, Jan	Canada
Krynski, Jan	Poland
Liebsch, Gunter	Germany
Mäkinen, Jaakko	Finland
Marti, Urs	Switzerland
Marša, Jan	Czech Republic
Mojzes, Marcel	Slovakia
Poutanen, Markku	Finland
Roman, Dan	USA
Sánchez, Laura	Germany
Schöne, Tilo	Germany
Shipman, Steve	Monaco
Šíma, Zdislav	Czech Republik
Simek, Jaroslav	Czech Republic
Vatrt, Viliam	Czech Republik
Véronneau, Marc	Canada
Vojtísková, Marie	Czech Republik
Wilmes, Herbert	Germany

ICP1.2 Workshop  
 10-11 April Prague  
 List of Participants

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