IAG Newsletter

February 2005

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Contents

The *IAG Newsletter* is under the editorial responsibility of the *Communication and Outreach Branch* (COB) of the IAG.

It is an open forum and contributors are welcome to send material (preferably in electronic form) to the IAG COB (newsletter@iag-aig.org). These contributions should complement information sent by IAG officials or by IAG symposia organizers (reports and announcements). The *IAG Newsletter* is published monthly. It is available in different formats from the IAG new internet site: http://www.iag-aig.org

Each *IAG Newsletter* includes several of the following topics:

I. news from the Bureau Members
II. general information
III. reports of IAG symposia
IV. reports by commissions, special commissions or study groups
V. symposia announcements
VI. book reviews
VII. fast bibliography

Books for review are the responsibility of:

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General Announcements

IAG correspondent change

Chile's national correspondent is no longer Pablo Gran Lopez. The new correspondent's contact information is as follows:

Luis ALEGRIA Matta
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lalegria@igm.cl

Luis ALEGRIA Matta is also the new president of the National Committee.

IAG CENTRAL BUREAU

PhD or Postdoctoral position within the Descartes Prize "Nutation"

Project GALILEO

In November 2003, the Descartes Prize was awarded to a European consortium of scientists lead by V. Dehant and a certain amount of money was received. The consortium decided to use it for PhD or postdoctoral positions in the frame of research on the understanding of the next decimal in nutation. After an open call for proposals several research projects and travel grants were accepted by a review board. For one of these projects, called "GALILEO", a PhD or postdoctoral fellowship for 6 months to one year (a further extension is rather likely) is offered here.

Nutations are mainly observed using VLBI and partly by GPS for the short periods. The upcoming European Galileo system, as well as the modernization of GPS will allow better precisions of all parameters, including the nutations. The new combined GPS/GALILEO constellations and the future GNSS signals can lead to a better determination, not only of short period nutations, but also of all the important geophysical nutations, provided that long enough data series exist. Furthermore, as each space geodetic technique has its own strengths but also limitations, combinations of nutation time series based on VLBI, GPS, and Galileo are foreseen in the future. Moreover, combinations on the SINEX level and on the observational level will also be done. One part of the project will include a detailed study using simulated Galileo data.

Specialists in the nutation modeling and nutation computation using GPS and VLBI are at TU Vienna (Robert Weber, Harald Schuh) and at ROB, Brussels (Fabian Roosbeek, Carine Bruyninx, Véronique Dehant). Additionally, Jim Ray (NOAA) and Markus Rothacher (GFZ, Potsdam) have also been working on that problem and are consequently advisor of this project as well.

We foresee one or two PhD students or post-docs for 6 months or one year for working at ROB in Brussels and/or at Vienna TU preferably in international exchange. The project GALILEO is supposed to start as soon as possible in 2005. Applications should be sent to Veronique Dehant (v.dehant@oma.be) until March 15, 2005.

IERS MESSAGE NO. 69
IERS CENTRAL BUREAU

Quake Moved Sumatra By Only 20 Centimeters: Danish Scientists

Copenhagen (AFP) Jan 31, 2005

The Indonesian islands of Sumatra moved only 20 centimeters (7.9 inches) on average after last month's Asian earthquake and tsunami, and not dozens of meters as previously feared, media reported on Monday, quoting calculations by the Danish Space Center.
The new numbers, reported on television channel TV2's website, vary greatly from reports in the days following the devastating December 26 earthquake that the tip of the Sumatra island may have moved by as much as 36 metersfeet).
US Geological Survey scientist Ken Hudnut told AFP on December 27 that some of the smaller Sumatra islands may have moved about 20 meters while the northeastern tip of the Indonesian territory could have slid about 36 meters to the southwest after the quake, which measured 9.0 on the Richter scale.
Scientists Shfaqat Abbas Khan and Olafur Gudmundsson of the Danish Space Center, who used a GPS satellite system to determine the extent of the plate movement following the earthquake, have however since found that the island did not move more than 20 centimeters on average.
"For the Sumatra earthquake there were horizontal moves of about seven meters around the crack area. But that area is about 200 to 300 kilometers (124 to 186 miles) west of Sumatra, so Sumatra itself could only have moved about 20 centimeters," Khan told TV2.
The two Danish scientists' findings also contradicts a report from the Malaysian navy published on Monday stating that the depth in certain stretches of the narrow Malacca Strait, one of the world's busiest shipping lanes, had changed by as much as two meters after the quake.
"The GPS observations show that the Malacca Strait near Sumatra basically hasn't changed," Khan said.

SOURCE: WWW.SPACEDAILY.COM

Meeting Announcements

IAG Sponsored Meetings

International Symposium on Geodetic Deformation Monitoring - From Geophysical to Engineering Roles

17-19 March, 2005, Jaén (Spain)
The International Symposium on Geodetic Deformation Monitoring: From Geophysical to Geodetic Roles will be held at the University of Jaén (Spain) from 17th to 19th March 2005. The Symposium will be hosted by the Geodesy Research Group of the University of Jaén. For more information please visit the workshop web site at http://www.ujaen.es/huesped/gdeforma/.

International Workshop on "Deformation and Gravity Change: Indicators of Isostasy, Tectonics, Volcanism and Climate Change"

1-4 March 2005, Lanzarote, Canary Islands, Spain
The International Workshop on "Deformation and Gravity Change: Indicators of Isostasy, Tectonics, Volcanism and Climate Change" will be held at Casa de los Volcanes (a scientific and cultural meeting place) on Lanzarote, Canary Islands, Spain. Organizers are José Fernández (jose_fernandez@mat.ucm.es) and Detlef Wolf (dasca@gfz-potsdam.de).

EUREF Symposium 2005 Vienna

1-4 June 2005, Vienna, Austria
The next regular EUREF 2005 Symposium will be held in Vienna, Austria, June 1-4, 2005. More detailed information please find updated on the Symposia homepage http://euref2005.oeaw.ac.at/ .

Dynamic Planet 2005

"Monitoring and Understanding a Dynamic Planet with Geodetic and Oceanographic Tools"
A Joint Assembly of the IAG, IAPSO and IABO
22 - 26 August 2005, Cairns, Australia
Scientists from all countries are invited to participate in this unique conference – a joint assembly of the International Association of Geodesy (IAG), International Association for Physical Sciences of the Oceans

(IAPSO), and the International Association for Biological Oceanography (IBO). For further information, please visit the Dynamic Planet website http://www.dynamicplanet2005.com.

7th conference on Optical 3-D Measurement Techniques

3-5 October 2005, Vienna, Austria
The 7th conference on "Optical 3-D Measurement Techniques" will be held from October 3-5, 2005 in Vienna, Austria and is co-sponsored by the ISPRS Commission V, the FIG Commission 5 and 6, and the IAG Sub-commission 4.2. The conference website is: http://info.tuwien.ac.at/ingeo/optical3d/o3d.htm. The first announcement in pdf format can be downloaded from the conference website at: http://info.tuwien.ac.at/ingeo/optical3d/o3d1st.pdf.

IAG Related Meetings

INTERGEO East

7-9 March 2005, Zagreb, Croatia
The second Trade Fair and Conference for geodesy, geoinformation, land management, building industry and environment this year is taking place in Zagreb – Croatia. Please visit http://www.intergeo-east.com/ for more information.

Munich Satellite Navigation Summit 2005

8-10 March 2005, Munich, Germany
The Munich Satellite Navigation Summit 2005 is the unique conference of invited high-ranking speakers from industry, science and governments. In 2005 the main focus will be on the worldwide co-operation in satellite navigation. What are the new possibilities of GPS and Galileo which can be established after the EU-US Agreement and what is the main impact for the application of satellite navigation, in combination with telecommunications and geo-information technology. The webpage of the conference is http://www.munich-satellite-navigation-summit.org/index2.htm.

The 2nd International Specialized Forum GeoForm+

14-17 March 2005, Moscow, Russia
The major Geo event on Russian market. The forum unites four exhibitions: GeoMap - Geodesy, cartography, geoinformation and control systems, navigation; GeoTech - Technologies and equipment for exploring natural resources; GeoTunnel - Technologies and equipment for tunnel construction; GeoMineral - Industrial Minerals - mining, extracting, preparation, recycling. The conference website can be reached at the following address: http://www.geoexpo.ru/defaulteng.stm.

EGU General Assembly

24-29 April 2005, Vienna, Austria
The General Assembly of the European Geosciences Union (EGU) is held at the Austria Center Vienna (ACV) in Vienna, Austria, from 24 - 29 April 2005. The assembly is open to the scientists of all nations. The scientific programme of the General Assembly includes Union Symposia, Oral and Poster Sessions on disciplinary and interdisciplinary topics covering the full spectrum of the geosciences and the space and planetary sciences. The conference website can be reached at the following address:http://www.copernicus.org/EGU/ga/egu05/index.htm.

GIS Planet 2005

30 May- 2 June 2005, Estoril, Lisboa Portugal
The II conference & exhibition on geographic information will take place Estoril Congress Centre, Lisboa Portugal. GIS PLANET is a global, independent and open event dedicated to Geographic Information. More information is available at http://www.gisplanet.org.

AOGS 2nd Annual Meeting 2005

20-24 June 2005, Suntec, Singapore
The Asia Oceania Geosciences Society (AOGS) will hold its 2nd Meeting on 20 to 24 June, 2005 at the Singapore Suntec City Convention Centre. In all, over 100 sessions in Solid Earth, Solar Terresterial, Planetary Science, Hydrological Science, Oceans & Atmospheres and Interdisciplinary Working Groups. Additionally,

nearly all sections have an Open Category for garnering submissions of its own class. For more details please visit http://www.asiaoceania-conference.org/.

IAMAS 2005

2-11 August 2005, Beijing, China
The International Association of Meteorology and Atmospheric Sciences (IAMAS), will hold its biennial Scientific Assembly in Beijing, China from 2-11 August 2005. The theme of the conference is The Fascinating Atmosphere: Changeable and Changing, and will cover all areas of meteorology and atmospheric sciences, including dynamics, radiation, chemistry, electricity, clouds and precipitation, and climate variability and change. Further details can be found on the IAMAS 2005 web site http://www.iamas2005.com.

12th International Symposium on Deformation Measurement

12-15 September 2005, Qingdao ,China
You are cordially invited to the 12th International Symposium on Deformation Measurements organized by Commission 6 of the International Federation of Surveyors (FIG) to be held in Qingdao, China, 12-15 September 2005. Please visit the conference website for further information: http://www.fig.net/isdm12.

4th Congress of the Balkan Geophysical Society

9-12 October 2005, Bucharest ,Romania
The International Conference and Exhibition "Geophysics Without Frontiers" is organized and hosted by the Romanian Society of Geophysics in cooperation with EAGE, SEG, EGU and AGU, under the auspices of the IUGG. The Congress focuses the attention of the whole community of geophysicists on Balkans. The conference webpage is www.bgs-bucharest2005.ro.

IAG Sister Societies' General Assemblies

FIG Working Week and GSDI-8 – "From Pharaohs to Geoinformatics"

16-21 April 2005, Cairo, Egypt
Read more about technical and social programme, pre-conference workshops etc. at http://www.fig.net/cairo. The event is organized together with GSDI-8. Please visit the web site also for pre-conference workshops like the "Virtual Academy and the Surveying/Geoinformatics Community" to be held April 16, 2005.

ICC2005 Conference

9-16 July 2005, A Coruña, Spain
The XXII International Cartographic Conference (ICC) is the most important event in the International Cartographic Association (ICA) calendar. Please visit http://www.icc2005.org for details.

ISPRS Workshop Laser scanning 2005

12-14 September 2005, Enschede, the Netherlands
The workshop, held at the ITC in Enschede, will bring together an interdisciplinary group of researchers, system developers, data providers and end users to discuss and demonstrate recent developments in laser scanner data processing, the potential of the technique and future trends in sensorics and data processing. Further information on the workshop can be obtained from http://www.itc.nl/isprswgIII-3/laserscanning2005/.

Meeting reports

Report on International School for "The Determination and Use of the Geoid"

The Department of Geodesy and Surveying of the Budapest University of Technology and Economics (BUTE) in collaboration with the Research Group for Physical Geodesy and Geodynamics of the Hungarian Academy of Sciences (HAS) hosted the International School for „*The Determination and Use of the Geoid*" in Budapest, Hungary. The School took place between January 31 and February 4, 2005 and continued the tradition of International Geoid Schools, started in Milan (Italy, 1994) and continued in Rio de Janeiro (Brasil, 1997), Milan (1999), Johor (Malaysia, 2000) and Thessaloniki (Greece, 2002). The School was

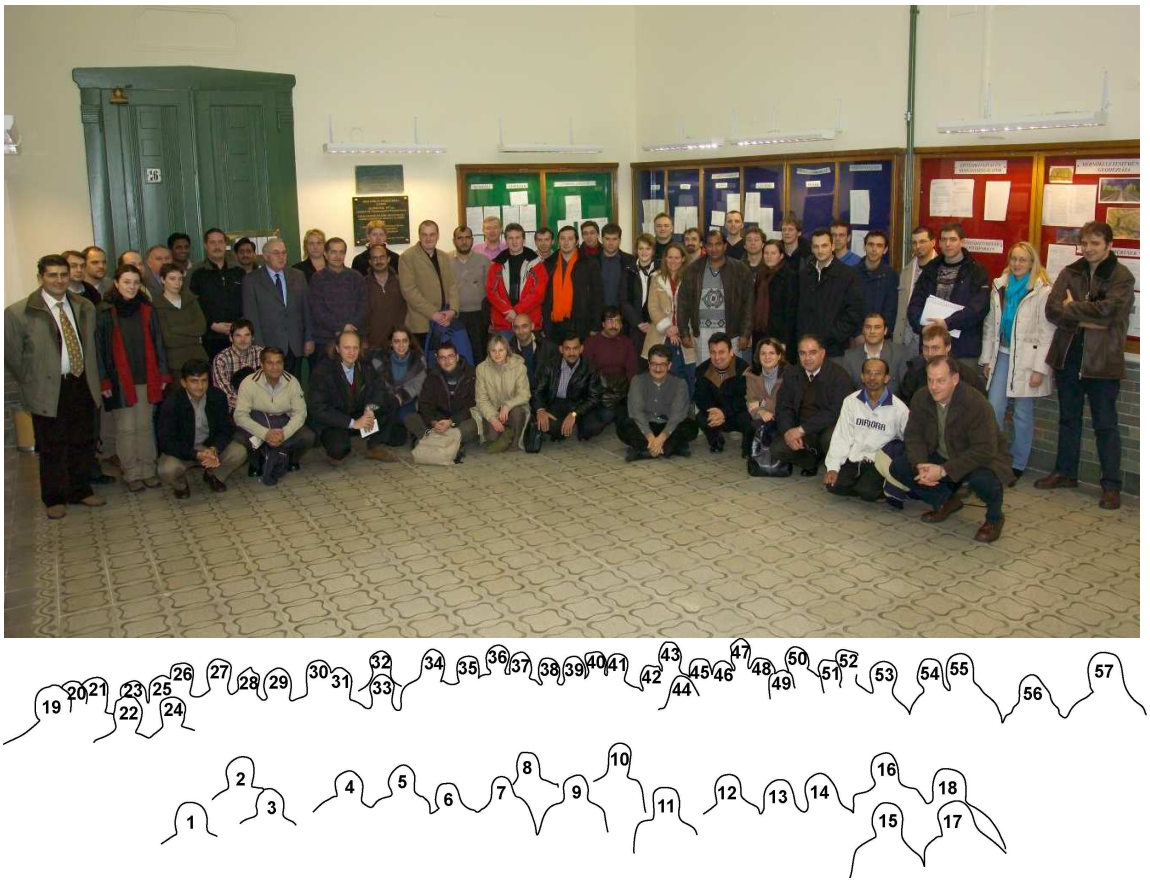
organized by the International Geoid Service (IGeS) and BUTE/HAS. The members of the Local Organizing Committee were: József Ádám (Chairman), Lóránt Földváry, Szabolcs Rózsa (Secretary) and Gyula Tóth.

After a short welcome speech given by Fernandó Sansó (IGeS President) and József Ádám (LOC Chairman), the lectures started immediately. The courses have been given by *Fernandó Sansó* (A compendium of physical geodesy in view of geoid computation and related height questions), *Riccardo Barzaghi* (The Global Geopotential Models), *Christian C. Tscherning* (Geoid Determination by least-squares collocation using GRAVSOFT), *Michael G. Sideris* (Geoid Determination by FFT Techniques) and *Ilias N. Tziavos* (The Terrain Effects in Geoid Estimation). One seminar on „Present Day Activities of the International Gravimetric Bureau (BGI)" was presented by M. Abbasi and Th. Fayard from BGI, France.

The lecture notes of these courses were prepared in a printed volume and CD. The CD contained exercises, data sets and software as well. Each student received one copy of the printed Lecture Notes and one CD.

The Lecture Notes on Global Geopotential Models was prepared by *Peter Schwintzer* (GeoForschungsZentrum, Potsdam), who passed away before the School. His Lecture Notes titled as „The gravity field of the Earth: global gravitational potential models" is dedicated in memory of Peter Schwintzer.

All courses, but for the first one, have been followed by computer exercises, where the software available at IGeS have been used. A 160-seat-lecture room equipped with overhead projector, PC-beamer and multimedia tools (DVD, VHS) was provided for the lectures. The same room was used for the computer exercises, when simultaneously 21 computers could run the software. The computer exercises on FFT techniques and terrain effects were assisted by Post Doctoral Fellows *Georgia Fotopoulos* (Calgary, Canada) respectively *Vassilios Grigoriadis* (Thessaloniki, Greece).



1	K. Shahzad	11	F. Sansó	21	Sz. Rózsa	31	M. Sideris	41	J. Müller	51	V. Grigoriadis
2	B. Barisic	12	F. Kartal	22	B. Erol	32	T. Horváth	42	F. Wild	52	W. van der Wal
3	A. Shahzad	13	A. Kartal	23	L. Földváry	33	I. Ali	43	D. Markovinovic	53	D. Sampietro
4	R. Barzaghi	14	R. Yanar	24	P. Zaletnyik	34	T. Olszak	44	H. Skourup	54	J. Ferko
5	M. Vasconcelos	15	Z. Abidin	25	J. Ádám	35	M. Sadiq	45	T. Fayard	55	O. Nesvadba
6	D. Garcia	16	M. Abbasi	26	B. Devaraju	36	C.C. Tscherning	46	M. Nazar	56	E. Fantino
7	M. Grzyb	17	U. Schirmer	27	G. Timár	37	J. Bogusz	47	J. Kolar	57	R. Duchnowski
8	J.F. Navarro	18	G. Ramillien	28	M. Imran	38	M. Kuhar	48	G. Buble		

9	H. Askri	19	O. Firat	29	G. Beutler	39	O. Renkevich	49	G. Fotopoulos
10	A. S. Almas	20	H. Kutoglu	30	C. Schneider	40	A. Maggi	50	M. Veicherts

Participants of the International Geoid School (Budapest, Hungary, January 31 – February 4, 2005.)

49 participants arrived to the school from the following 19 countries: Canada (3), Croatia (3), Czech Republic (1), Denmark (3), France (3), Germany (3), Greece (1), Hungary (5), Italy (3), Malaysia (1), Pakistan (8), Poland (4), Portugal (1), Saudi Arabia (3), Slovakia (1), Slovenia (1), Spain (2), Turkey (2) and Ukraine (1) (see photo of the school students and teachers). The number of participants from Developing Countries as well as from the countries of Central- and Eastern-Europe is quite significant. The largest group of 8 participants arrived from Pakistan. Most of the school participants are being involved since several years in geodetic, geophysical, cartographic or surveying jobs.

A welcome speech was also delivered to the School participants by the IAG President, *Gerhard Beutler* who arrived in Budapest only for one day for the IAG Bureau Meeting (BUTE, 1 February, 2005) (see photo of the IAG Bureau meeting participants).

From right to left: F. Sansò (IAG Past President), C. Schneider Petersen (IAG Central Bureau Secretary), G. Beutler (IAG President), C.C. Tscherning (IAG Secretary General), M. Sideris (IAG Vice President), J. Ádám (IAG COB Chairman, as host).
Participants of the IAG Bureau Meeting (Budapest, 1 February, 2005).

Since the International Geoid School had a full-week intensive program, therefore it was counted as an external full graduate course. A few doctorate (PhD) students took a written exam to accomplish this school as a graduate course. For this purpose school teachers provided exam questions. The students took this exam at the end of each lecture day. The questions were theoretical and for a small numerical exercise. Finally IGeS President prepares a document on the exam assessment which will be delivered to these students and their graduate schools.

In the closing ceremony *I. N. Tziavos* (Vice President of IAG Commission 2 – Gravity Field) kindly delivered an evaluation of the school, and finally each student received a Certificate signed by M. G. Sideris (IAG Vice President) and J. Ádám (LOC Chairman) that certifies the participation in the International School on "The Determination and Use of the Geoid".

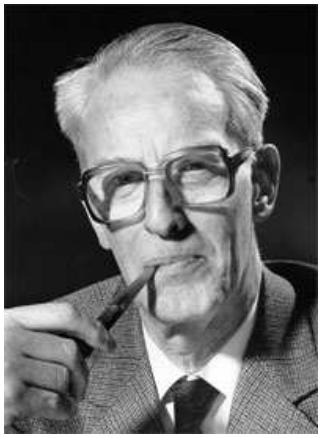
This training course provided a good opportunity to familiarize with the latest developments in geoid determination, as well as to enhance the international collaboration in gravity field modeling by building contacts to the professionals dealing with geoid determination in various countries. We hope that the successful

format and atmosphere established by the previous geoid schools continued in Budapest, and the school will be continued in next years.

JÓZSEF ÁDÁM AND SZABOLCS RÓZSA

Obituary

Prof .Dr. Ir. Willem Baarda (1917 – 2005)



Prof. Baarda in 1982 (A. Smits)

On 2nd January 2005 the honorary member of the Netherlands Geodetic Commission Prof.Dr.Ir. Willem Baarda passed away in Delft, the Netherlands. Prof. Baarda was from 1952 up to 1996 member of the Commission and as from 1996 honorary member. From 1957 up to 1980 he was Secretary and from 1980 up to 1987 President of the Commission.

Career

Willem Baarda was born on 20th July 1917 at Leeuwarden, the capital of the province of Friesland. After having completed high school in 1935 – after contact with a land-surveyor of the Cadastre – Baarda went to the course for 'Civil land-surveyor' which had just been established at the Delft University of Technology. In 1939 he was awarded the Diploma *cum laude!* After his demobilisation in 1940, Baarda found work as a land-surveyor for the Cadastre. He would continue this work to the end of 1946, among other things charged with surveying in the North East polder, i.e. the north-eastern part of the Zuiderzee land reclamation project, which became dry land in 1942. In 1946, Baarda was transferred to the National Triangulation Maintenance department in Delft, where also the training for Civil land-surveyor was housed. In 1947, following a proposal by Prof. J.M. Tienstra, Baarda was appointed Reader in Land-surveying, levelling and geodesy. In 1948, the diploma of Geodetic engineer was established. Those in the possession of a Land-surveyor's diploma of the Delft and Wageningen courses were given the opportunity to qualify as a Geodetic engineer by writing a thesis. Baarda made use of this possibility and so the remarkable event took place that a candidate who had been a university Reader for four years, got his engineering diploma. The title of Baarda's thesis was 'Reconnaissance of a Snellius point' (i.e. a resection point). In 1951 Prof. Tienstra died and on his wish Baarda succeeded him. In 1958, Baarda established the Geodetic Computing Center (LGR). In cooperation with Prof. Roelofs, Baarda was involved in the whole process by which the LGR of the Department of Civil Engineering became an independent Department of Geodesy with its own complete engineering degree. In the years following he contributed to educational and organisational commissions, both at the department and university level. In 1982 he received his honourable resignation as a Professor.

Scientific work

In the period 1940 – 1945 Baarda laid the foundation for his later scientific thoughts. "Living in a small room at Zwolle, Baarda began to reconstruct the theory he had learned from Tienstra. He had to do this from memory and by his own wits, because he did not have the lecture notes with him and the war situation – it was 1944 – made travelling impossible." (H.C. van der Hoek in 'Forty years of thought', Delft 1982). After this period of self-study Baarda saw sharper than ever what was wrong with the classical theory of survey control. Now a start could be made with the development of a new theory. Already the Manual for the technical surveying activities of the Cadastre (HTW-56), published in 1956 and also of the hand of Baarda, shows clearly characteristics of what later would become Baarda's famous Precision and Reliability theory. Baarda's contribution to the HTW was honoured as he received the Royal distinction of becoming an Officer in the Order of Oranje Nassau.

In 1954 the Netherlands Geodetic Commission published a paper by Baarda, titled 'Some Remarks on the Computation and Adjustment of Large Systems of Geodetic Triangulations'. The paper was presented to the IAG Congress in Rome. In it, Baarda made a critical investigation of the classical theory of geodetic computations. Especially the use of the ellipsoidal computational model with its tangle of correction terms was not acceptable to Baarda. It was a computational model that produced misclosure terms which could not be attributed to the random variations in the observational material, but instead were rather a consequence of the fact that the choice of model did not permit the use of invariant form variates. In the period following, Baarda developed his own two- and three-dimensional theory of geodetic networks. A theory in which a sharp distinction was made between estimable and non-estimable quantities, between form variates and datum parameters, and between free networks and the higher order network connections. The linking and unlinking of models, together with the consistent use of form variates, runs like a continuous thread through Baarda's work. It also stands at the basis of his famous theory of S-transformations. From a historical perspective it is interesting to note that in developing his theory of S-transformations, Baarda also had found a way of solving non-invertible linear systems. The theory of S-transformations can therefore be considered an alternative to the theory of generalised inverses.

Significance

Baarda's Delft Geodetic Computing Center (LGR) played an important role in making his ideas accepted and operational, both at the national level and at the international level. Also the long term chairmanship of the Special Study Group 'Specifications for fundamental geodetic networks' (1963-1979), entrusted to Baarda by the International Association or Geodesy (IAG), was significant in this respect. His theories were tested nationally and internationally, and rigorous, but practical solutions were formulated for use in geodetic practice.

Baarda has always had very good personal contacts with his international peers. In the initial period there were the contacts, among others, with Levallois, Dupuis and Bjerhammar, in the later period, among others, with Krarup, Grafarend and Rummel. In that later period Baarda also tried to extend his ideas so as to eliminate the artificial separation between geometrical geodesy on the one hand and physical geodesy on the other hand. His publication 'A Connection between Geometric and Gravimetric Geodesy' published in 1979 by the Netherlands Geodetic Commission is a prime example. With his consequent use of form variates Baarda obtained surprising results. But already in his 1963 publication 'Modeleffecten in de Geodesie' (report for the Netherlands Geodetic Commission), Baarda addressed issues and problems which are still relevant today for modern geodesy.

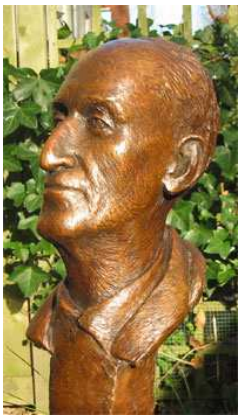
With his scientific contributions, Baarda has left an imperishable legacy to contemporary Geodesy. He has been a teacher and master of many of us. With his work, often referred to as the 'Delft School', Baarda has also enriched the geodetic vocabulary. Terms such as 'data snooping', 'w-test', 'inner and outer reliability', 'S-systems', and 'criterion matrices' are commonly used. And his computing methods are nowadays a regular part of geodetic software systems as used for cadastral, geodynamic, or earth observation applications.

It typifies Baarda that he continued, even at a progressed age, to follow the developments in the field and contributed to it. At the end of 2004 he was still active in developing his ideas further. As a result of discussions in the Netherlands Geodetic Commission concerning the revision of the National Triangulation System (RD) and the Amsterdam Height Datum (NAP), he expressed his doubts about how the geoid-concept was

made operational and about the accuracies with which heights could be determined with GPS. As a result of this, meetings have been held where scientific notes of his hand were discussed.

Baarda has been granted various honours. Beside several honorary memberships, Prof. Baarda is Knight in the Order of the Dutch Lion, Officer in the Order of Oranje Nassau, Member of the Royal Netherlands Academy of Arts and Sciences (KNAW), honorary doctor of the Universität Stuttgart and recipient of the Levallois Medal of the International Association or Geodesy. And during the symposium 'The Earth to Measure', which was held on the occasion of the 125th anniversary of the Netherlands Geodetic Commission on 24 February 2004, the Prof. Baarda Lecture was established and a bust of Baarda (see photograph) was revealed.

Prof. Baarda in the studio of the sculptor Josine Croin, 2003
(F.H. Schröder)



The bust of Prof. Baarda by Josine Croin, 2003
(F.H. Schröder)

With the demise of Prof. Baarda, we have lost one of the greatest geodesists of our time, a unique personality and an important innovator of our profession. Had Baarda, with his broad field of interest, become a biologist or an econometrist, he undoubtedly would have been a pioneer in those fields as well. Accidental circumstances determined that he became a geodesist. This we are very grateful for.

PETER TEUNISSEN

Acknowledgement: H.C. van der Hoek in 'Forty years of thought', Delft 1982.