

“Geodesy and its future” by A.Dermanis & F.Sanso’ - some comments and some views on a new structure.

by **C.C.Tscherning**, Department of Geophysics, University of Copenhagen.

The two authors have a rather negative view of the present situation of geodesy. We are at a critical point, may loose out identity.

I think this feeling is related to that the authors work at educational institutions and that geodesy at these institutions geodesy is connected to surveying. Personally, as you know ,I have my roots in and work daily in close contact with a national surveying agency and work now in an environment where geodesy is a part of geophysics - or earth sciences if you like.

For Greece and Italy there is also the fact that these countries have been surveyed in much detail already for a long time. But this is not so for many countries. Vast areas are unsurveyed, not to mention the bottoms of oceans, lakes and glaciers. So there is still a role for the traditional task of geodesy in providing the base for topographic maps.

The authors also mention that geodesy is a small field. But all fields of science are small, if broken into parts.

One of the preliminary conclusions are that we should look for “other” directions in the earth sciences, but it is stated that there is no tradition in this respect. This is however not completely true. Geodesy at Oxford and in Copenhagen have been associated with the faculties of science. At many places geodesy is still together with astronomy (Madrid).

I also think that it is not true that geodesy is **not** found in connection with GPS in the literature. In GPS World there has been many papers with geodetic aspects, and datum definition and datum shift is a very important object in “GPS”.

It is argued that geodesy is an applied science, because observations are not just a means of confirming a theory as in physics. It may be so that physics today is dominated by the pass from theory to observations. But this is surely a recent development (last 80 years). Several of our “experiments” have their start in theory, such as refraction formulae. The problem is probably more that our basic theory, which still holds very much, is old (Newton, Gauss).

Now these first remarks may sound a little critical towards the paper by Sakis and Fernando, but I agree however very much with the last 2/3 of the paper.

The increased precision and resolution of our measurements will point at new applications in the Earth Sciences as well as in Navigation. I have great success in teaching geodesy to students from all branches of the Earth Sciences, including Geography. So I can only see a very good future both inside and outside geodesy.

New organisation of geodesy.

Now the object of all these discussions are to find a better way to organize geodesy, and this is not an easy task. I have big confidence in the work of the review Committee, and had originally decided not to interfere with the process, but wait for the good proposal. I will however give my partly solution. But first some remarks.

IAG has the responsibility for two large meetings, the General Assembly (with IUGG) and the scientific assembly. The section presidents and secretaries have been the conveners of sessions at these meetings.

The section presidents change every 4 years, but the commission presidents can stay totally 8 years. This gives continuity at commission level.

Not everything is organized in sections and commissions. The services are quite independent, and also feel associated with FAGS, which gives them some small money and a kind of independent base. Several of the services serve fields different from geodesy (IGS, IERS).

An obvious structure change would be to delete the sections and only work with commissions. This could work very well, with the present commission structure, where we would have to define some special commissions as commissions. The commission presidents should then be elected for only 1 period. The continuity should be assured by a president elect. This means that all presidents of commissions would serve totally 8 years in the commission. Proposals should be solicited from the commission, but the elections should be done by the council.

The services should then be associated with a commission, so that the president of the commission is a member of the directing board (as it is now in many cases). The head of a service could be a kind of executive director for the commission. The connection to FAGS should must be strengthened, so that IAG appoints the IUGG representative to FAGS.

There is then left to organize activities which are not in a commission, and we must create a structure to take care of the two main IAG meetings. Education could be organized in a special commission (i.e. one without national representatives) and report directly to the EC or the Bureau. Some organisations elect a meetings director, who in collaboration with the commission presidents established the programs for the meetings. The secretary general should then only take care of meetings joint with IUGG (Inter association symposia).

Special study groups should be Commission or special commission working groups. The structure of a commission should be approved by the EC, who also should approve the election/appointment of a working group president.

I think these proposals should make the IAG structure less heavy, and more operational.

