

## Final project report

<i>Project ID</i>	2002/3.07
<i>Title</i>	RECONDAS ( <b>RE</b> covery, <b>CON</b> servation and <b>DIS</b> semination of <b>ANT</b> arctic <b>S</b> eismic data)
<i>Principal investigator</i>	Nigel Wardell
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<i>Duration</i>	2 years
<i>Assigned funding</i>	52.000,00 Euro

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### Activities and results

The principal objective of this project (RECONDAS) was not specifically scientific but more technological: the recovery, conservation and dissemination of the great quantity of seismic data collected in Antarctica in the last 30 years. These data are the fruit of many national scientific expeditions to the Antarctica and represent not only a considerable investment but also a unique collection of seismic data that will almost certainly never be acquired again. It is of paramount importance that these data be maintained in an appropriate manner and made available to the next generation of earth scientists.

The first part of the project involved the recovery and storage of more than 38,000 kms of MCS (Multichannel Seismic) data that were acquired in the Antarctic between 1987 and 1997 by OGS as part of the PNRA expeditions. These data were recorded in the original field data format on more than 8,000 half-inch 9-track magnetic tapes. Even when magnetic tapes are optimally stored in a climatized environment, there is a physical degradation of the oxide coating over a period of time creating problems in the reading of the data. In the project RECONDAS, 26,000 kms of these tapes were transcribed onto 3480/90 cartridges which have the advantage of being more durable in time and being much smaller are easier to store. During this phase the data were also converted from the original SEG-D field format to a standard SEG-Y trace sequential format which is readable with any seismic processing package.

The second part of the project proposed to continue the SCAR initiative of the SDLS (Antarctic Seismic Data Library for collaborative research) for the distribution of digital stacked MCS data on CD-ROM from national Antarctic Programs to the 11 SDLS library branches worldwide. The preparation, production and distribution of seismic data on CD-ROM continued during the project. A further 43 CD-ROMs containing data from the national Antarctic programs of the USA, UK, Japan and Italy were completed bringing the total data in the SDLS to 76 CD-ROMs containing 120,000 kms of seismic profiles available at the library branches for consultation by Antarctic researchers.

The third part of the project involved the development of a prototype web-site to further facilitate access to the digital seismic data by the research community utilising modern internet technology. The SNAP web portal has been designed specifically using open-source software that allows data to be accessed and downloaded from a normal web-browser. The portal is totally dynamic with no static pages but with pages being created 'on-the-fly' based on the request of the user. All the metadata is contained in a relational database that is populated at the moment of data loading directly from the standard SEG-Y file header. The geographical positioning of the seismic lines is mapped using GMT and the seismic lines are visualised interactively using CWP/SU. With the web pages and graphical images being created 'on-the-fly' from the database, the user can perform 'zoom' or 'pan' to any desired scale directly from original data. This functionality is guaranteed using scripts based on PHP that link the MySQL database to the Apache web server. This open-source platform is generally referred to as LAMP (Linux, Apache, MySQL, PHP).

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## Products

### A – papers in scientific magazines

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### B – book chapters

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### C - proceedings of international conferences

1. **Childs J.R., Wardell N., Cooper A.K., Brancolini G., O'Brien P.E.**, *An Antarctic Seismic Data Library for the 21<sup>st</sup> Century*. In: The Geologic Record of the Antarctic Ice Sheet from Drilling, Coring and Seismic Studies, (F. Florindo and A.K. Cooper, eds.), Extended Abstract Volume for the International ANTOSTRAT Symposium, 8-14 September 2001, Erice, Italy, Quaderni di Geofisica, 16, 33, 2001.
2. **Childs J.R., Wardell N., Cooper A.K., Brancolini G.**, The Antarctic Seismic Data Library System for Cooperative Research. *Eos Trans. AGU*, 82(47), Fall Meeting Suppl., Abstract OS11B-0366, 2001
3. **Wardell N., Diviacco P.**, 2002 Reprocessing and Dissemination of Antarctic Seismic Data., Workshop, Scienza della Terra in Antartide, Siena.
4. **Childs J.R., Wardell N., Cooper A.K., & Brancolini G.**, The Antarctic Seismic Data Library System for Cooperative Research, Antarctic contributions to Global Earth Science (IX°ISAES), Potsdam 2003

### D – proceedings of national meetings and conferences

1. **Diviacco P., Wardell N.**, Recupero e Divulgazione di Dati Sismici Antartici, 2002 21st Convegno Del Gruppo Nazionale di Geofisica della Terra Solida (NGGTS), Roma . Extended Abstracts P395.

### E – thematic maps

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### F – patents, prototypes and data bases

1. The SNAP web portal further developed during project WANDA at <http://sdl.s.ogs.trieste.it>

### G – exhibits, organization of conferences, editing and similar

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### H - formation (PhD thesis, research fellowships, etc.)

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## Research units

OGS:  
Nigel Wardell  
Paolo Diviacco  
Maurizio Marchi  
Claudio Pelos

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**Date: 9/4/2010**

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### Notes

This project was continued in the subsequent PNRA project 2004\_3.6 WANDA (**W**eb-based **AN**tartic **D**ata **A**rchive)