1. Name of database:

PACE data

2. Owner of data in database:

The PACE survey (PACE = Policies, Apporpriation and Competitiveness in Europe) was financed by the EU SPRINT programme. The coordination was undertaken at MERIT, University of Limburg, The Netherlands, and the Danish part of the survey was undertaken by IKE - Department of Business Studies, Aalborg University in co-operation with the Ministry of Research.

3. DRUID contact:

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4. Brief verbal description of database

The PACE survey is the predecessor of the YALE survey which was undertaken at Colombia University USA in the beginning of the 1980's. The objective is to analyse a selected part of manufacturing firms, i.e. the largest and most R&D-intensive. 1500 of these firms in Europe is the sample of the survey. The information from these firms is on activities in 1991 and 1992.

Implementation of PACE in Denmark

In Denmark the frame should - according to the above criteria - include only 25 firms. However, in order to get more observations the frame was extended to 58 firms (In other small EU-countries a similar strategy was followed.). One of these was excluded and of the remaining 57 firms 50 responded (88%) on the rather detailed and large questionnaire. Non-responding firms were not systematically biased in any way. An approximately XX per cent of the turnover and approximately XX per cent of the internally financed R&D in the manufacturing sector in Denmark is covered by these 50 firms.

5. Variables in PACE survey

The PACE questionnaire is more wide-ranging and specific than the CIS survey. It concentrates on ordinal rankings of types of knowledge flow or support within technological knowledge, research output and methods of access to these results, appropriability, public policy. Table 2 in the annex show variables in the survey. It shows that the ordinal data are predominant.

6. Accessible on the internet?

No. Also these data are restricted. As with CIS, only three persons in each country can access the data (the DRUID contact being one of them).

7. Update planned?

No.

8. References to publications where the database has been used

A. Arundel et al. (1995): “Innovation strategies of Europe’s largest industrial firms”, Merit

Annex - Table 1: Variables in the CIS questionnaire

Group of variable	Examples of variables/sub-groups of variables	Type of variable
General information	Number of employees, Turnover in 1992 and 1990, innovative - non-innovative	metric, binary
Sources of information for innovation	Internal sources, external-/market sources, educational-/research establishment, Generally available information.	Ordinal
Objectives of innovation	Replace products, extend products, new markets, lower production costs	Ordinal
Acquisition/transfer of technology	Licences, consultants, purchase/sale of equipment, skilled employees, R&D, communication with other enterprises. All variables broken down on geographi	Binary
Appropriability	patents, design, secrecy, lead time advanteges, complexity	Binary
R&D Activity	Expenditure internal and external R&D, plans for R&D, cooperation with different partners broken down on geographi	Binary, metric
Factors hampering innovation	economic factors, enterprise factors,	Ordinal
Costs of innovation	current expenditures - broken down on R&D, acq. of patents and licences, product design, trial production, market analysis, capital expenditures,	Metric
Impact of innovation activities	distribution of sales on product stage, degree of change of products, export sales, products new to the industry	Metric

Annex - Table 2: Variables in the PACE questionnaire

Group of variable	Examples of variables/sub-groups of variables	Type of variable
General information	Number of employees, Turnover in 1992 and 1990, innovative - non-innovative	metric, binary
Sources of information for innovation	Internal sources/parent firms, external-/market sources, educational-/research establishment, public conferences, joint ventures	Ordinal
Appropriability	Patents, design, secrecy, lead time advanteges, complexity	Ordinal
R&D Activity output	use of basic research results, specialised knowledge, instrumentation, prototypes, trained researchers or scientists	Ordinal
Methods of access	Publications, conferences, hiring skilled labour, personal contacts, funding R&D, joint R&D	Ordinal
Public policies	Procurement policies, subsidies, R&D support, information programmes, co-operation programmes, agencies for accessing international information	Ordinal