

## Annex 1: Members of the PIM Study Team

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## Annex 2 – PIM Team Working Method

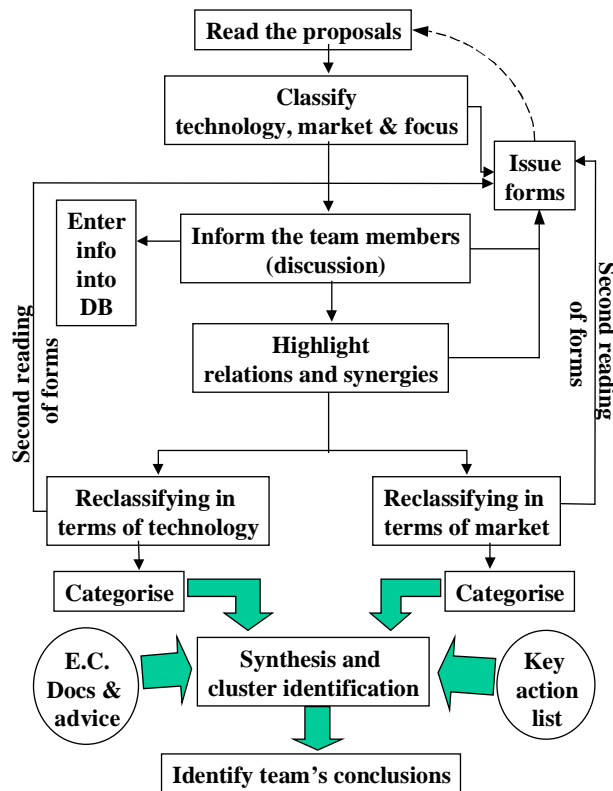


Figure A2.1 PIM team working method

### A.1 Reading of Proposals

The baseline information provided to the team was 640 or so project proposals that had successfully come through the technical evaluation of the First Call, and had been ‘ranked’ by the evaluation panels. Each ranked proposal was read by a single member of the team, to obtain an overview of its scope, this being written-up as a single-page resumé. Proposals were distributed randomly to team members to ensure that each individual saw a sample of all technology areas, support measures and take-up actions. Following the individual reading sessions, the resúmes were presented to the entire team, and similarities and potential relationships between proposals noted on the resumé sheets. These team sessions to discuss the resúmes took place at regular intervals during the reading phase and covered between 50 and 70 projects at a time.

A one or two line description of the scope of each project was captured from the resúmes and compiled into an aide-memoire for use in later analysis.

### A.2 Classification of Proposals

Following the second discussion of resúmes, an initial scheme for classifying the proposals was agreed. This scheme covered:

- A. Technology,
- B. Market type,
- C. Project Focus
- D. Involvement of end users

Multiple classifications (max. 3) were allowed in the first three categories (Technologies, Markets and Focus).

The reader of a proposal suggested how it might be classified under the headings, and this was progressively refined through discussion, and comparison with related proposals. It should be noted that the classification categories themselves evolved, as different types of proposals and research topics came to light in successive team meetings. Though some evaluation panels were still working at the time the PIM study began, all proposals had been received, read and initially classified by the PIM team within the first ten days of the Study.

The classifications, together with the themes used by the Commission for allocating the proposals to individual evaluation panels, were captured in a centralised Microsoft Access database.

The final classification categories were:

A	<b><i>Technologies</i></b>
1	Value/Support/Acompanying measures
2	Technology of optimisation
3	Software engineering (simulation, DP, integration)
4	Interoperability technology
5	Knowledge engineering and management
6	Security
7	Agent/Middleware
8	Technology for generic applications
9	Service platforms and facilities technology
10	Human interfacing inc. virtual reality
11-17	Not used
18	UMTS SFTW Radio
19	GPS GSM Terminals
20	Wireless access OPN/wireless LAN
21	Optical networks, physical access networks
22	IP Plus Management node
23	WSI cluster projects
24	Advanced optoelectronic-design-coordination action
25	Advanced microelec-design-coordination action
26	Semiconductor processes-equipment-material
27	Microsystems
28	Microwave devices and antennas
29	Quantum research
30	Basic research
31	Display and components

B	<b><i>Market</i></b>
1	Administration/Non-profit/Public Sector/EU-support
2	Software Market
3	Financial Banking
4	Manufacturing Processes (inc. Construction)
5	Retail/ Consumer Processes(inc. Tourism)
6	Services market
7	Healthcare (inc. Disable)
8	Media (inc. Advertising)
9	Education and awareness
10	Electronic Industry
11	Network and service operators
12	Telecom manufactures
13	Emergency Services
14	Autoindustry, manufacture and users
15	Non telecom service provider

16	Transport service provider
17	Longer term support projects

<b>C</b>	<b><i>Focus</i></b>
1	Personal/individual
2	Business/relationship
31	Technology
32	Standards
33	Systems
34	Location
35	Testbed
36	IPR
41	Governance Policy
42	Governance Regulatory

<b>D</b>	<b><i>User Involvement</i></b>
DY	Users involved
DN	No users involved
DK	Do not know

### A.3 Working Groups to Study Areas in-depth

The team faced a massive ‘Data Mining’ task of analysing 641 proposals in five dimensions in order to identify relationships, dependencies and issues that would help the Commission and the IST management committee integrate and manage the programme. The approach used was multi-criteria (or multi-dimensional) analysis, in which two-dimensional data-sets were extracted from the overall database and analysed one at a time.

In order to examine as many data sets as possible during this ‘consolidation-stage’ the team divided into four working groups covering different sectors of the proposals, for more focussed and in-depth analysis. These groups were:

- for technology,
  - a) microelectronics & optics
  - b) telecommunications & transport
  - c) technologies supporting applications
  - d) enabling technologies
- and for markets,
  - a) electronics
  - b) telecomms, automotive, home
  - c) vertical markets
  - d) education, business processes

The working groups agreed a more refined set of classifications for technology and markets and all proposals were reclassified accordingly. Meanwhile, proposals being received and read for the first time were then given a full classification.

In parallel with this reclassification exercise, the working groups began to identify clusters of proposals within the 5 dimensional data space. These clusters were then examined in more detail, referring to the proposal resumés, to identify potential links and synergies that were unlikely to have been picked up by individual evaluation panels and might form the basis for programme integration.

### A.4 Presentation of Initial Findings to Directors

A presentation of the interim findings of the PIM study was made to IST Directors on Wednesday 28 July. In preparation for this, refined classification data from the working groups was merged into the database, to as a basis for deriving integrated results spanning all proposals.

Discussions with the Directors following the presentation yielded useful feedback on the direction the study had been taking. On this basis the full database was consolidated and rechecked by the working groups, using the now-established classification.

## **A.5 Final Analysis and Report Writing**

The final stages of the PIM study were centred on

- Drawing out patterns and synergies amongst the proposals via further multi-criteria analysis of the database
- Establishing recommendations agreed by the entire PIM team, based on these results
- Assembling this report.

The results of the study are contained in the main body of this report, within the appendices, and within the database, which has been provided (with usage instructions) to the European Commission.

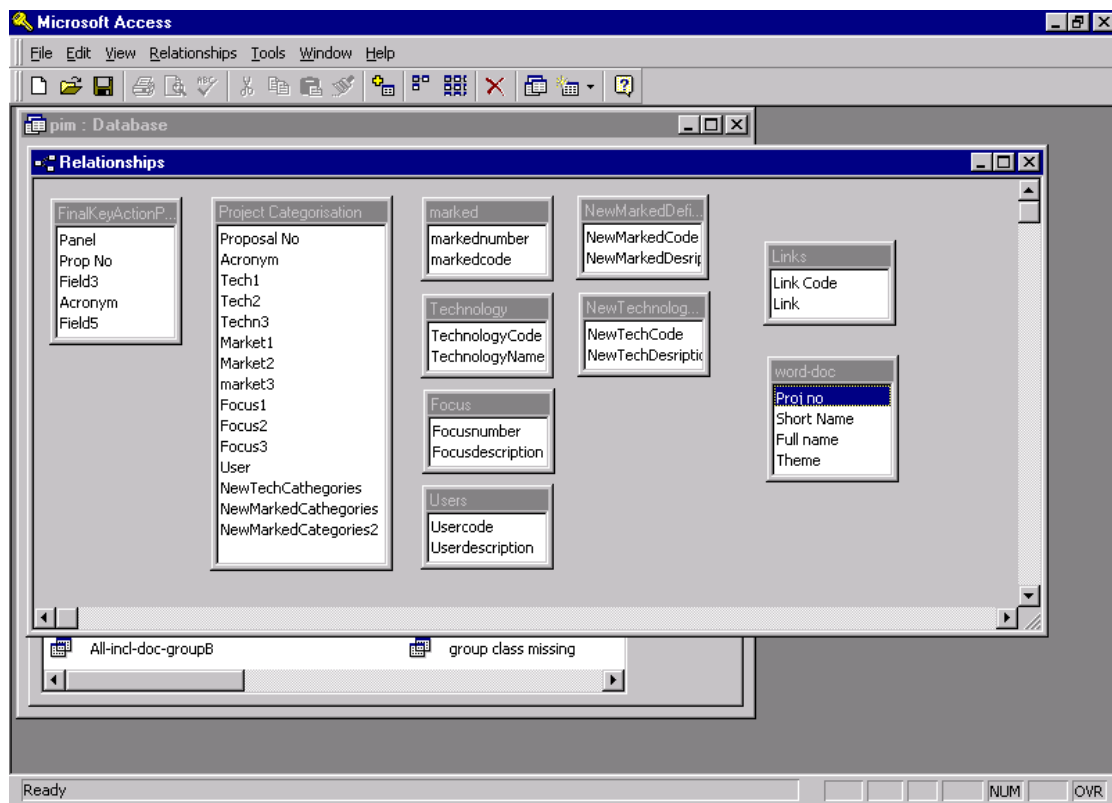
## Annex 3: The PIM Database (PIMBASE)

### A.1 Introduction.

This annex presents an outline of the database developed during the PIM study and provides advice on how to use it.

The study dealt with around 640 proposals and involved 17 readers. In order to classify the proposals and perform statistical analyses of them, it was important to develop a comprehensive database. The database was based on Microsoft Access and gradually evolved during the study in order to support more sophisticated analyses of the information.

### A.2 Structure of information



The tables in the database are:

#### ***FinalKeyActionProject:***

This is a table provided by the Commission listing all the ranked proposals. The table is crucial to the whole system and all analysis must be based on this. It contains proposal numbers, acronyms and the name of the panel which evaluated the proposal. The PIM team qualified the table with an additional code on Key Action level.

***Project Categorisation:*** This table contains the proposal number and all the classifications assigned to the proposal by the PIM team. Together with ***FinalKeyActionProject*** it forms the basis for all statistical analyses of the ranked proposals.

A query called ***All for analysis*** can be used to make quick queries. The following picture shows a query set up the find all proposals in “Key Action IV.” Note the ‘.’ in the string: Like ‘KAIV.\*’

Microsoft Access

File Edit View Insert Query Tools Window Help

All for analysis : Select Query

FinalKeyActionProject

Panel  
Prop No  
Field3  
Acronym  
Field5

Project Categorisation

Market2  
market3  
Focus1  
Focus2  
Focus3

Field:	Panel	Field3	Prop No	Acronym	NewTechCategori	NewMarkedCategori	Focus	Focus2
Table:	FinalKeyActionPr	FinalKeyActionP	FinalKey	FinalKe	Project Categorisatir	Project Categorisatir	Projec	Project Categorisatir
Sort:								
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:	Like "KAIV.*"							
or:								

Ready

The result will look like this:

Microsoft Access

File Edit View Insert Format Records Tools Window Help

All for analysis : Select Query

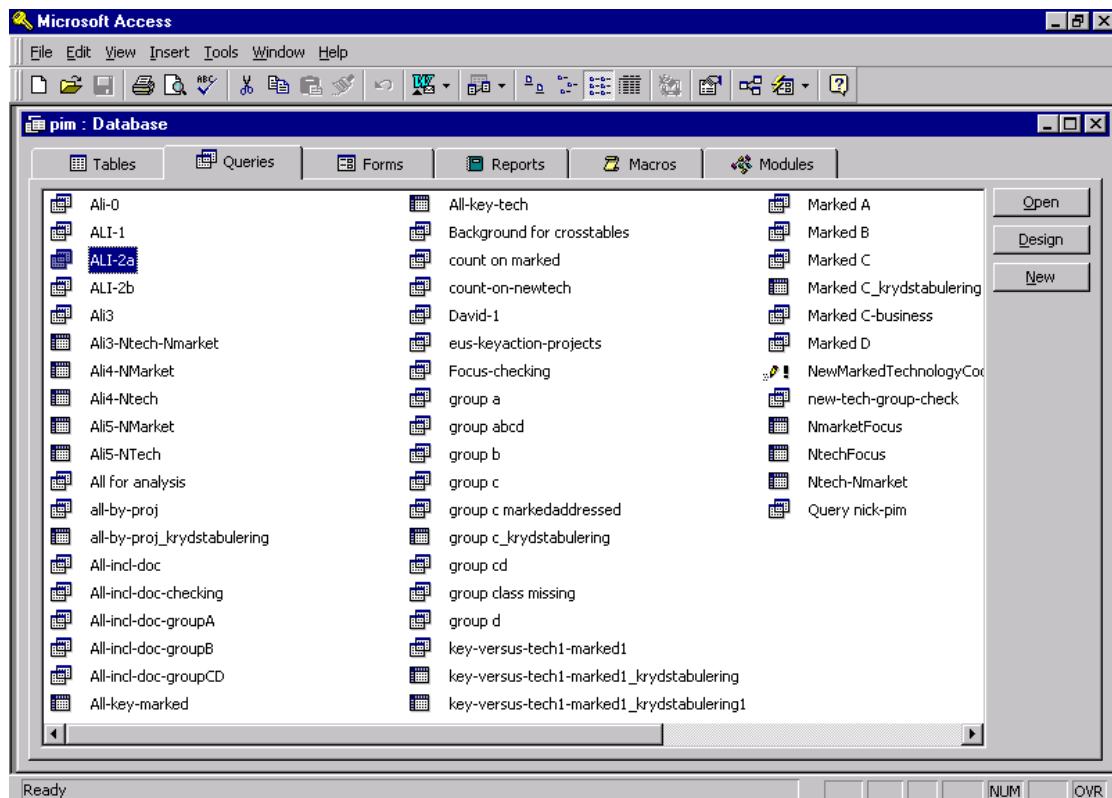
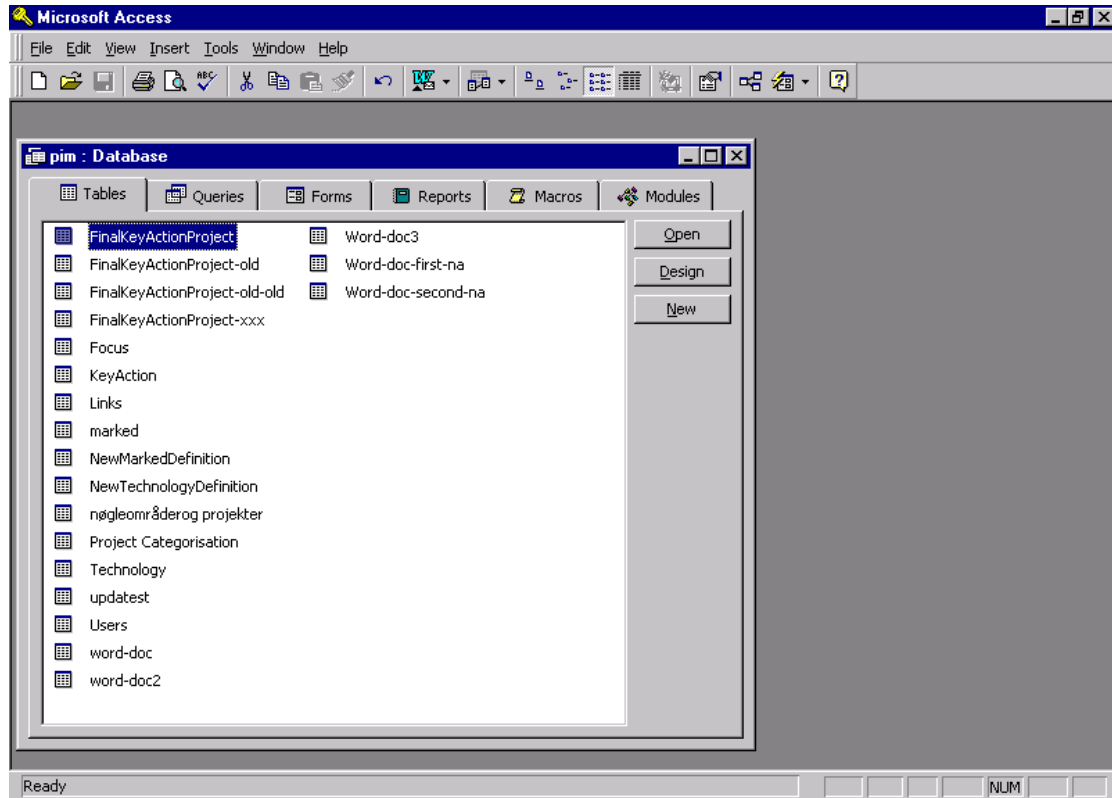
Panel	Field3	Prop No	Acronym	NewT	NewM	Focus1	Focus2	Focus3	User
KAIV.8 SEA (Take-up)	4	10373	300SISC	26	10				DN
KAIV.3.3-4 SAW Methoc	4	11712	3DTEXCONT	3	2				DY
KAIV.5 Mobile & Persor	4	10731	ADAMAS	20	12	3			DK
KAIV.6.1	4	10194	ADCIS	31	14	31			DY
KAIV.7.2 Subsystems	4	11114	ADEPT	26	10	31	33		DY
KAIV.7.2 Subsystems	4	11858	AFIDA	26	10	2			DY
KAIV.8.4 Opto & Micro	4	10292	AGETHA	24	14	31	33		DY
KAIV.3.1 Software Engii	4	10069	AIT - WOODDE	2	2	33	32		DY
KAIV.4.1	4	13346	AIT-VEPOP	3	12	31	32	33	DK
KAIV.2 Communications	4	12504	AJACS	7	14	2			DY
KAIV.8 SEA (Take-up)	4	10367	ALASCA2		7	2			DY
KAIV.4.2	4	10942	ALIVE	8	8	31	33		DY
KAIV.4.3	4	11156	AMOVITE	19	8	31			DK
KAIV. Nwk Managemen	4	10299	ANDROID	22	11	31	32		DK
KAIV.4.1	4	11676	ANFAS	3	33	42			DY
KAIV.5 Mobile & Persor	4	10034	ANTIUM	18	11	33			DY
KAIV.8 SEA (Take-up)	4	11826	APC300	26	10				DN
KAIV.7.2 Subsystems	4	11197	APERCO	28	12	31			DY
KAIV.2 Communications	4	10077	AQUILA	22	11	33	31	32	DY
KAIV.5 Mobile & Persor	4	10741	ASILUM	18	12	31			DN
KAIV.3.3-4 SAW Methoc	4	13082	ASSAVID		8	31	33		DY

Record: 1 of 228

Datasheet View

### A.3 Using the database - entering data

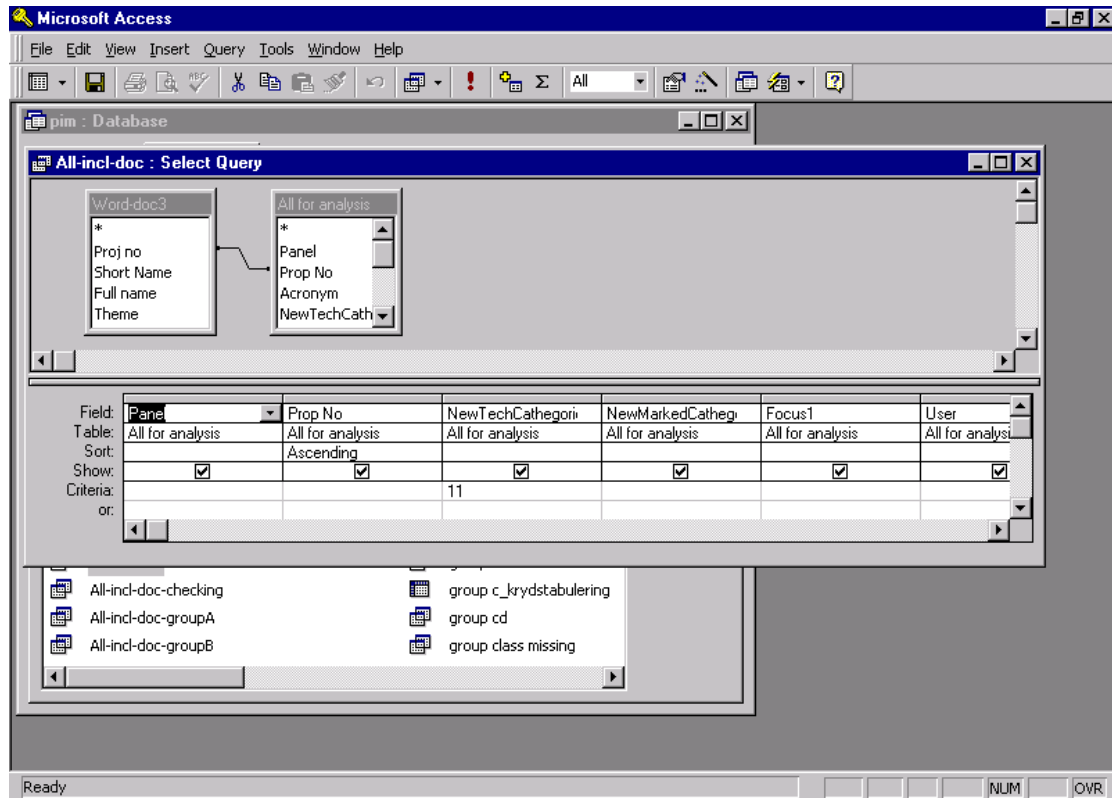
The database is built on Microsoft Access. There are some 'basis' tables and some basic queries, both of which can be seen in the following pictures, tables on top and queries on bottom. There are only two tables where data should be entered or changed, namely: 'FinalKeyActionProject' and 'Project Categorisation'. All other tables are references.



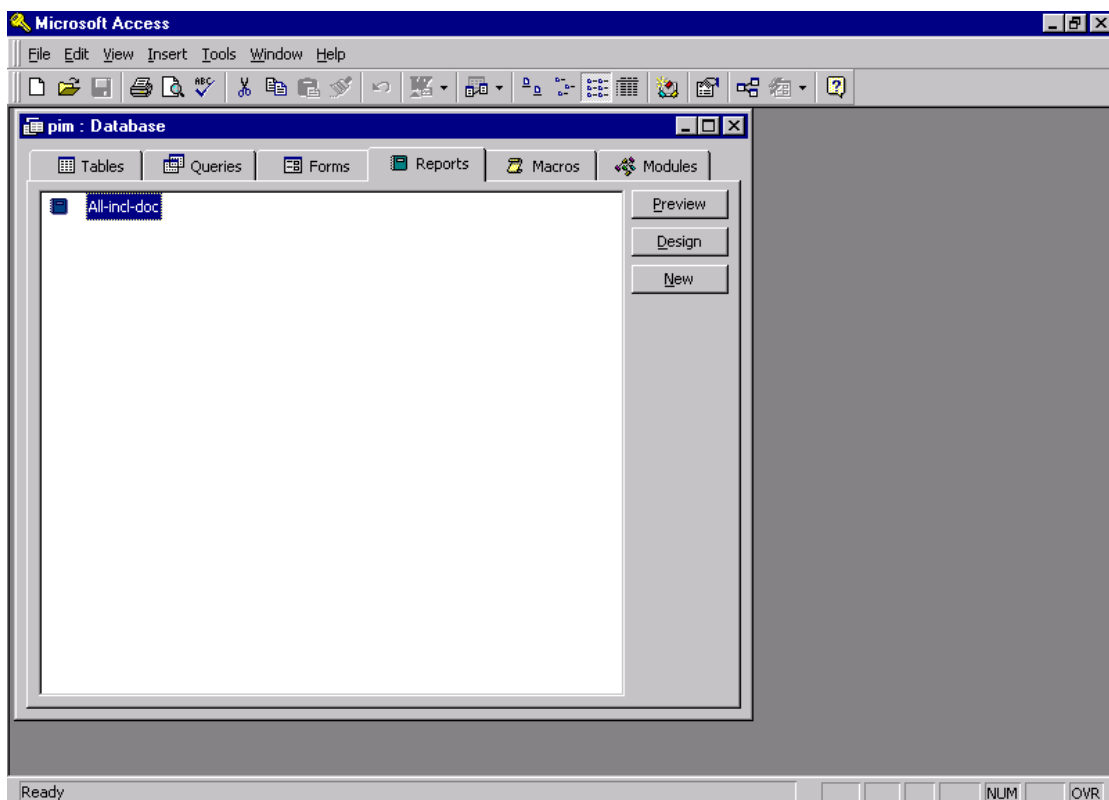


## A.4 Using the database - generating output

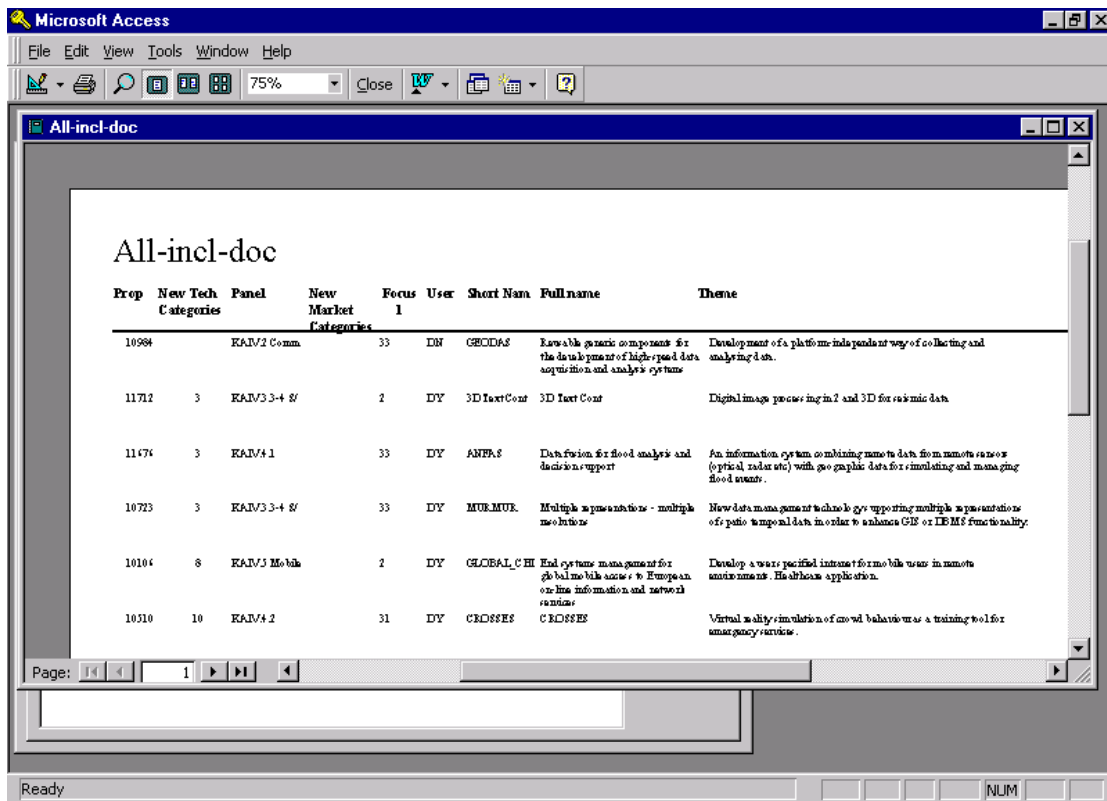
Reports showing selected categories together with a textual resume of each proposal within them can be generated. The picture below shows a query to set up a report filtered only by NewTechnology code 11 (which was merged later and now does not exist). However any combination of categories can be used to filter the data and generate a report.



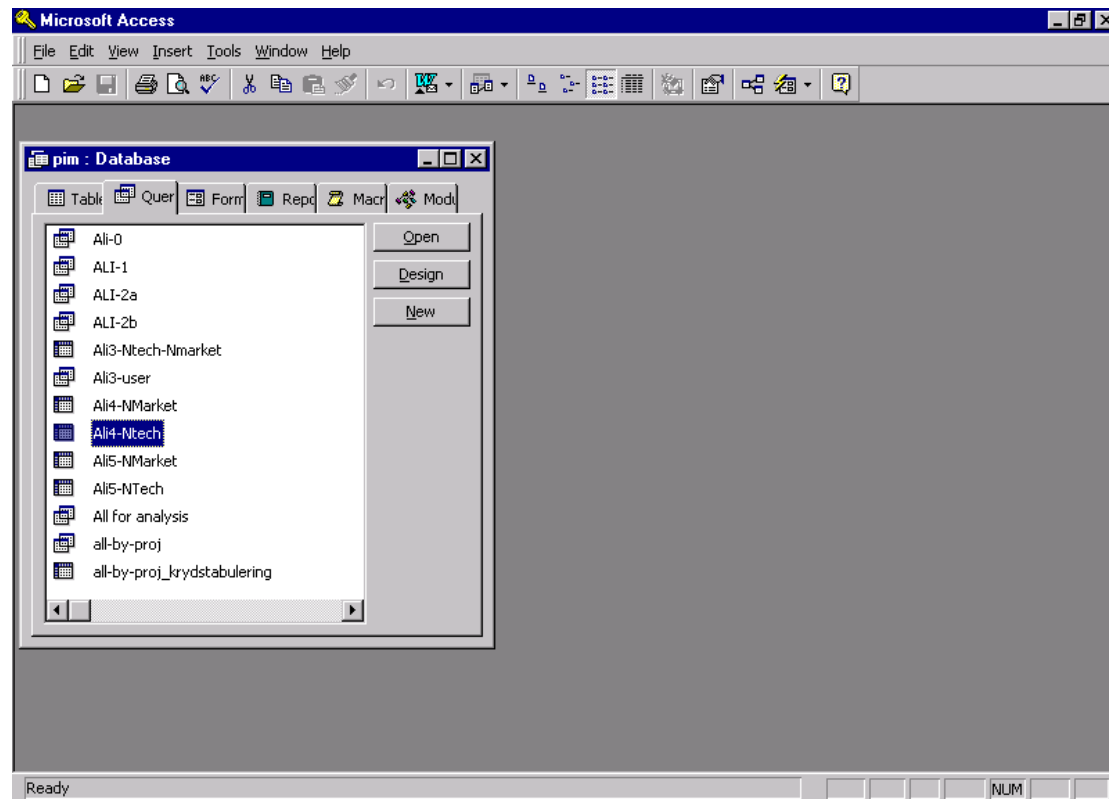
After setting up the query and saving it, the report called 'AllIndocs' can be opened and printed.



The Report for the earlier query selecting KAIV looks like this in the preview screen.



Basis queries can be seen in the table below:



### **A.5 Note. Table definitions and description of possible inconsistencies:**

It should be recognised that the database was developed by the PIM team to support their analysis and evolved significantly as the work progressed. It was being used actively until the last day of the study and there was not time to check the complete consistency of the entries and turn it into a user-friendly tool. It should however be usable by anyone with some experience of Microsoft Access and it should be relatively easy to update it once the actual set of first call projects is agreed.

It still contains all the data generated by the PIM team, even though the classification scheme was revised half way through the study. The categories 'Market', 'Technology', 'Focus' and 'Users' were initially used for populating the database. When the technology and market classifications were revised the categories 'NewMarked' and 'NewTechnology' were added. It is suggested that these classifications are more useful for analysing the data than the initial 'Market' and 'Technology' ones. Some of the working groups also introduced a secondary NewMarked field for their detailed internal analysis of the proposals.

