

PN-ACB-495

Contract AID/DAN-0232-C-00

Development Plan
for a
Thesaurus of A.I.D. Descriptors

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Prepared by

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for the

Office of Development
Information and Utilization
U.S. Agency for International
Development

OVERALL METHODOLOGY

The new A.I.D. thesaurus will be constructed in nine separate steps:

Step 1: Acquire either the Macrothesaurus or the Unesco tape in ISO-2709 format and a copyright release. As of this date a tape has been requested from the IDRC in Ottawa, and a cable requesting permission to use Macrothesaurus has been sent to the OECD.

Step 2: Generate the A.I.D. thesaurus subset of terms from DIS, RANDD, LCSH, AICS, and user requests. This subset will be taken from the thesaurus data base that currently exists on Inquire. These internal sources will be checked against up-to-date A.I.D. lists to make sure that our subset actually contains currently used descriptors. Each term in the data base contains relationship data, i.e., RT-NT-BT, and the source of the term, i.e., DIS, RANDD, Macrothesaurus, etc. This set of A.I.D. terms should total approximately 9,500 records.

Step 3: Establish the data base design. At this point a small test file will be created that will be used to check the conversion plan, the various output displays needed during the different construction phases, and some of the programs required. This step involves close work with a programmer.

Step 4: Create the A.I.D. thesaurus file. This will involve running the subset of A.I.D. terms (created in Step 2) against the Macrothesaurus or Unesco terms. The file of matching terms will then be printed out in classified order so that the completeness of the initial hierarchies can be evaluated. The Macrothesaurus

hierarchies are much more loosely defined than those in the Unesco Thesaurus, so this step could involve quite a bit of work.

Step 5: Complete the hierarchies created in Step 4 using terms from Macrothesaurus, as well as from other vocabularies, if needed. This step will involve a careful analysis of the hierarchies and a comparison of the hierarchies in the initial A.I.D. thesaurus with those in a well developed thesaurus such as Unesco. When the hierarchies are clearly defined, they will be printed in classified order. These hierarchies will be the skeleton of the new A.I.D. thesaurus.

Step 6: Examine the A.I.D. terms that didn't have character-for-character matches. The obvious synonyms will be transferred to the draft thesaurus file. These synonyms will be the forbidden terms, i.e., they will appear in the thesaurus with a reference directing the user to another term.

Step 7: Factor those remaining A.I.D. terms that are highly precombined. This step will temporarily create more descriptors, but many of them will be duplicates or synonyms of those terms already in the draft thesaurus file. The factored terms will be printed out in alphabetical order to facilitate the recognition of duplicates, and the synonyms and duplicates will be transferred to the draft thesaurus file.

Step 8: Integrate the remaining non-matched A.I.D. terms into the thesaurus. These terms will be placed in the appropriate facets and their hierarchical and associative relationships defined. At this point the thesaurus will be printed out and reviewed once again for completeness.

Step 9: Create the final thesaurus. A.I.D. will review the thesaurus and suggest changes. After the changes are made the phototypesetting tapes will be created. The thesaurus will be typeset in its three displays: 1) alphabetical, 2) classified, and 3) rotated descriptor; and the graphics, prefatory material, and covers will be generated.

Step 1: Acquire External Source Tapes, and Secure Copyright Releases.

Step 2: Generate the A.I.D. Thesaurus Subset of Terms from DIS, RANDD, LCSH, AICS, and User Requests.

Merge/match
data base. Inquire
tape.

Select DIS, RANDD,
LCSH, AICS, and
User terms to
give basic A.I.D.
Subset.

Printout of A.I.D.
subset by source
alpha order
within source

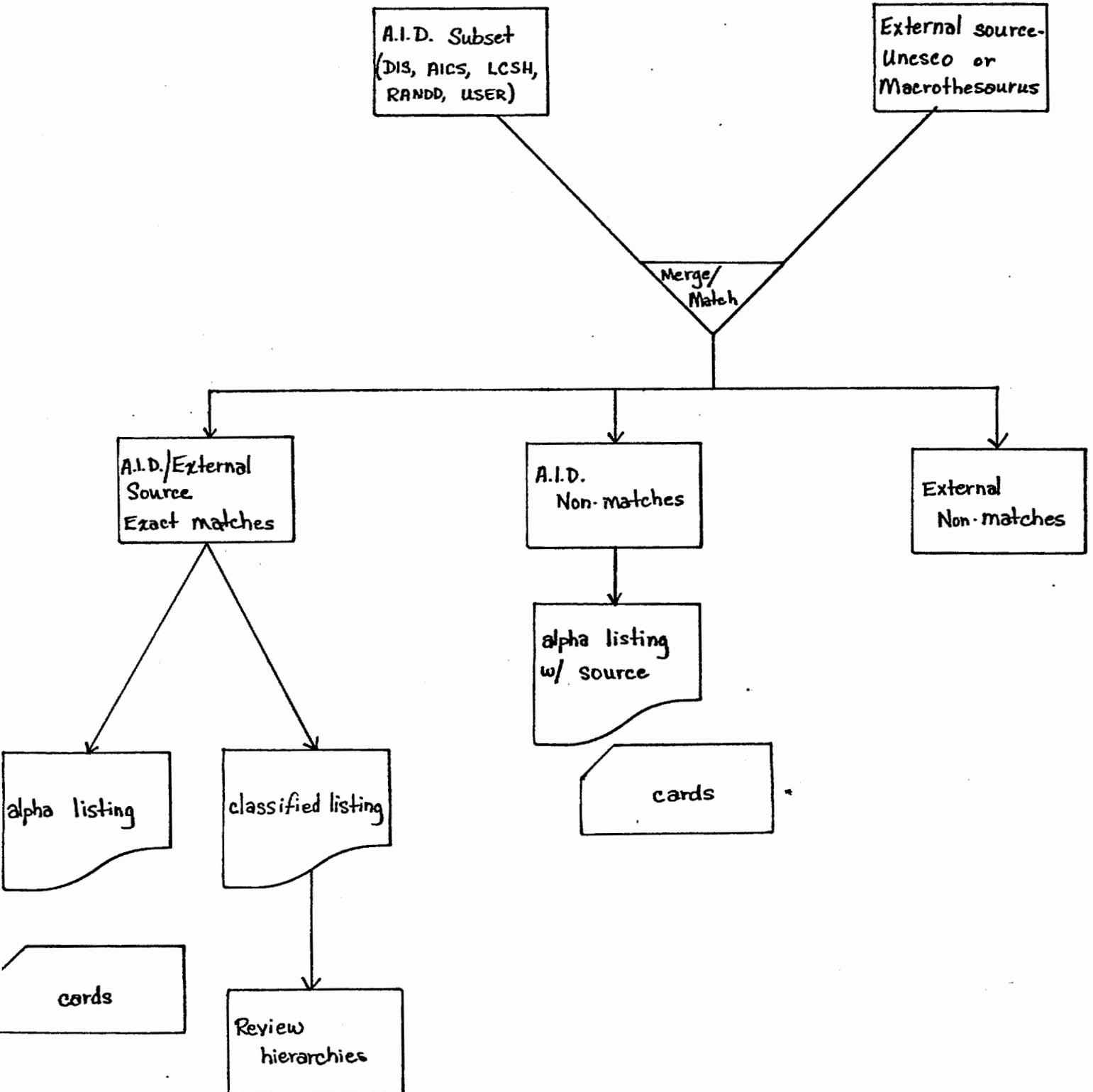
Check printout against
current A.I.D. lists.
Check printout
against ANSI
standards.

Revise A.I.D.
subset

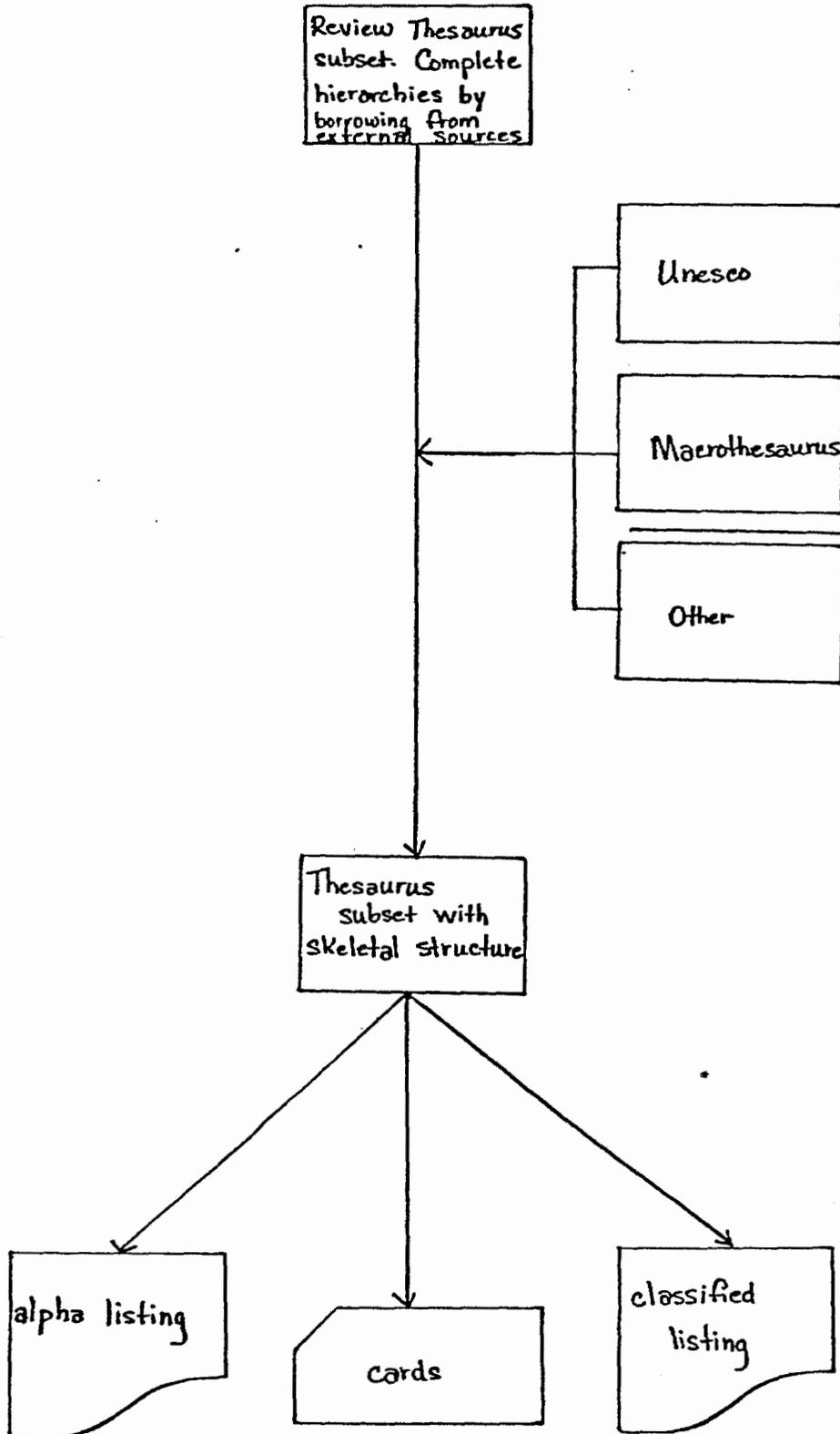
Complete, up-to-
date set of
A.I.D. terms.

Step 3: Establish Data Base Design. (Programming)

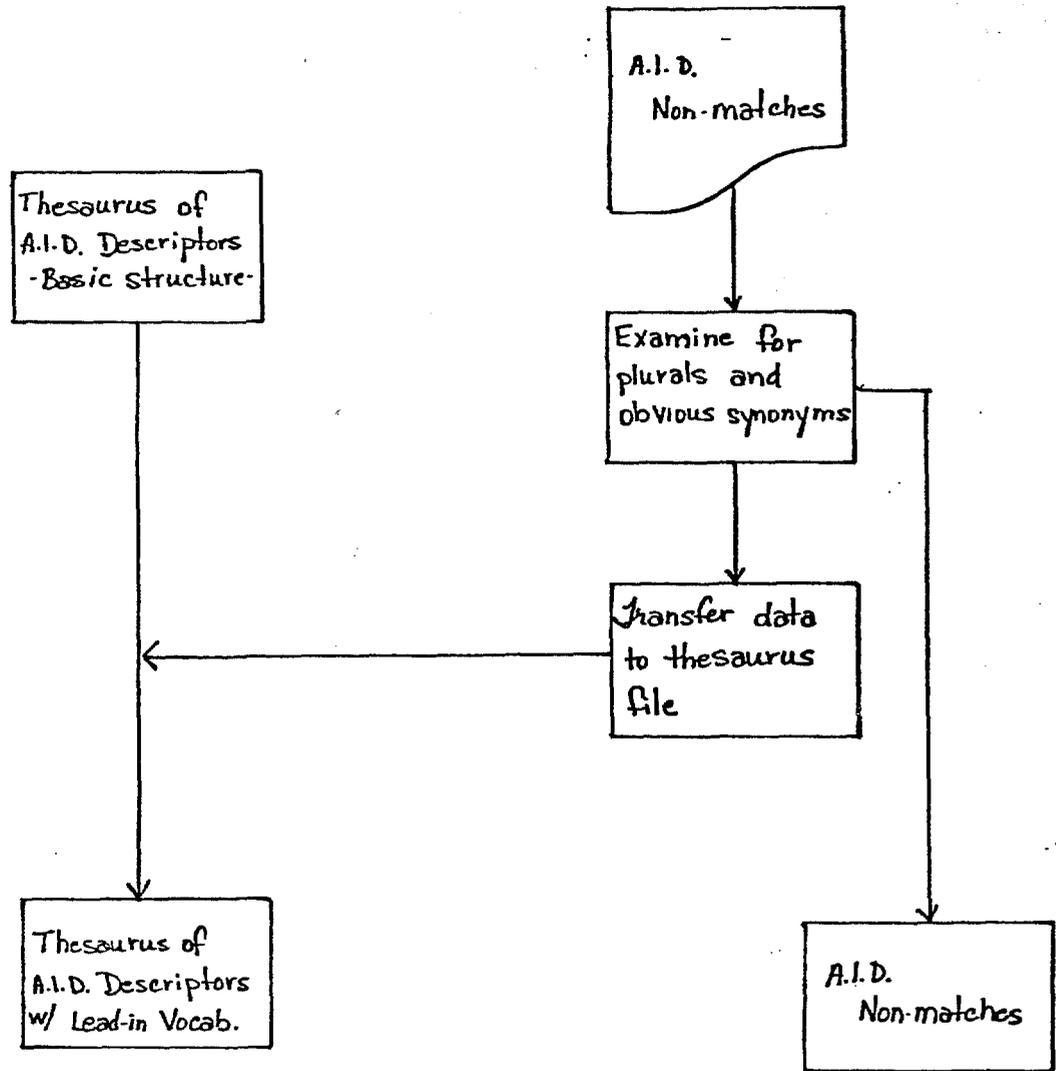
Step 4: Create the A.I.D. Thesaurus File by Matching A.I.D. Terms with an External Source Such as Unesco.



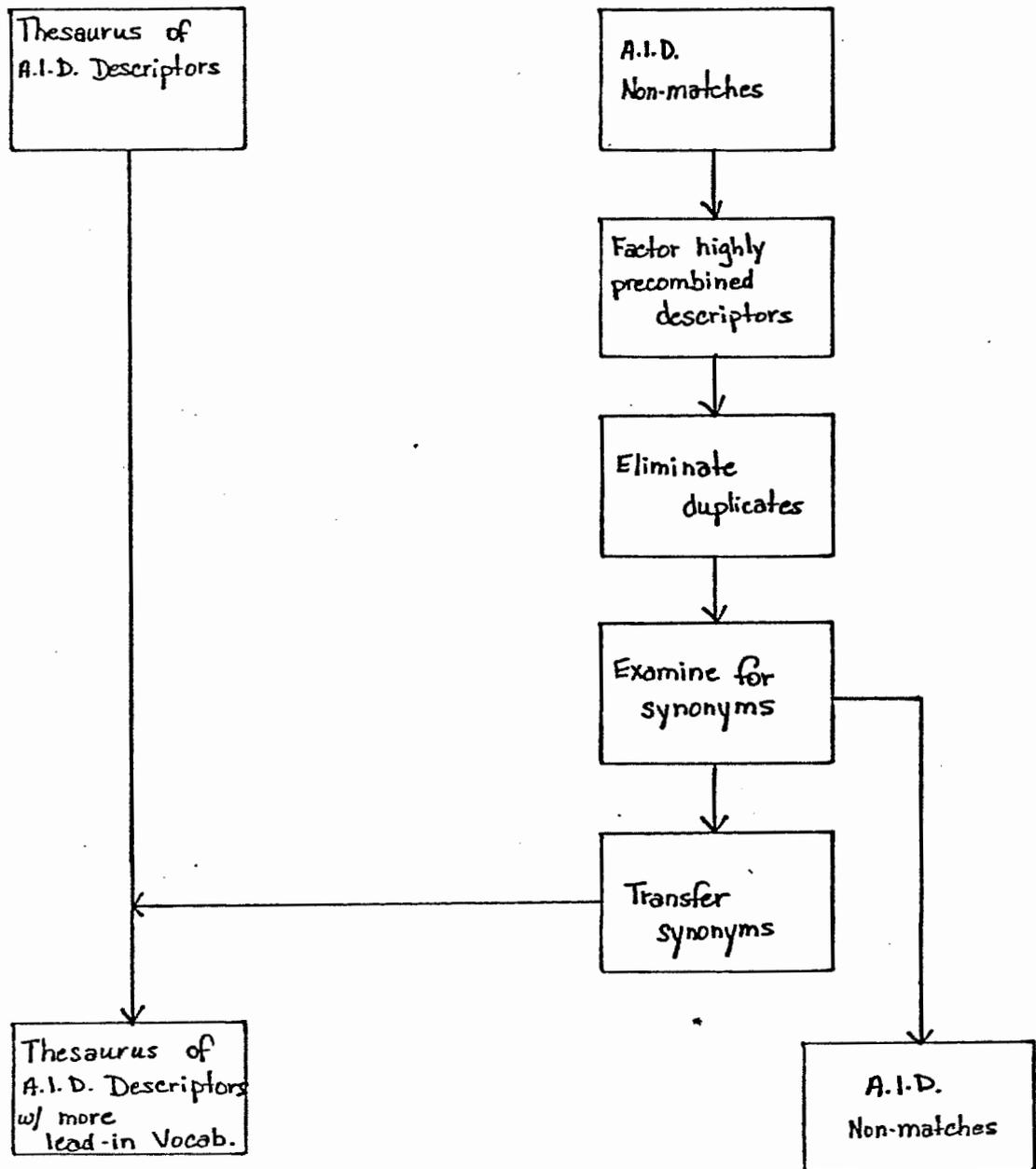
Step 5: Complete the Hierarchical Structure Created in Previous Step with Terms from Other Sources



Step 6: Transfer Synonyms to the Draft Thesaurus of A.I.D. Descriptors. Synonyms Will Become the Lead-in Vocabulary.

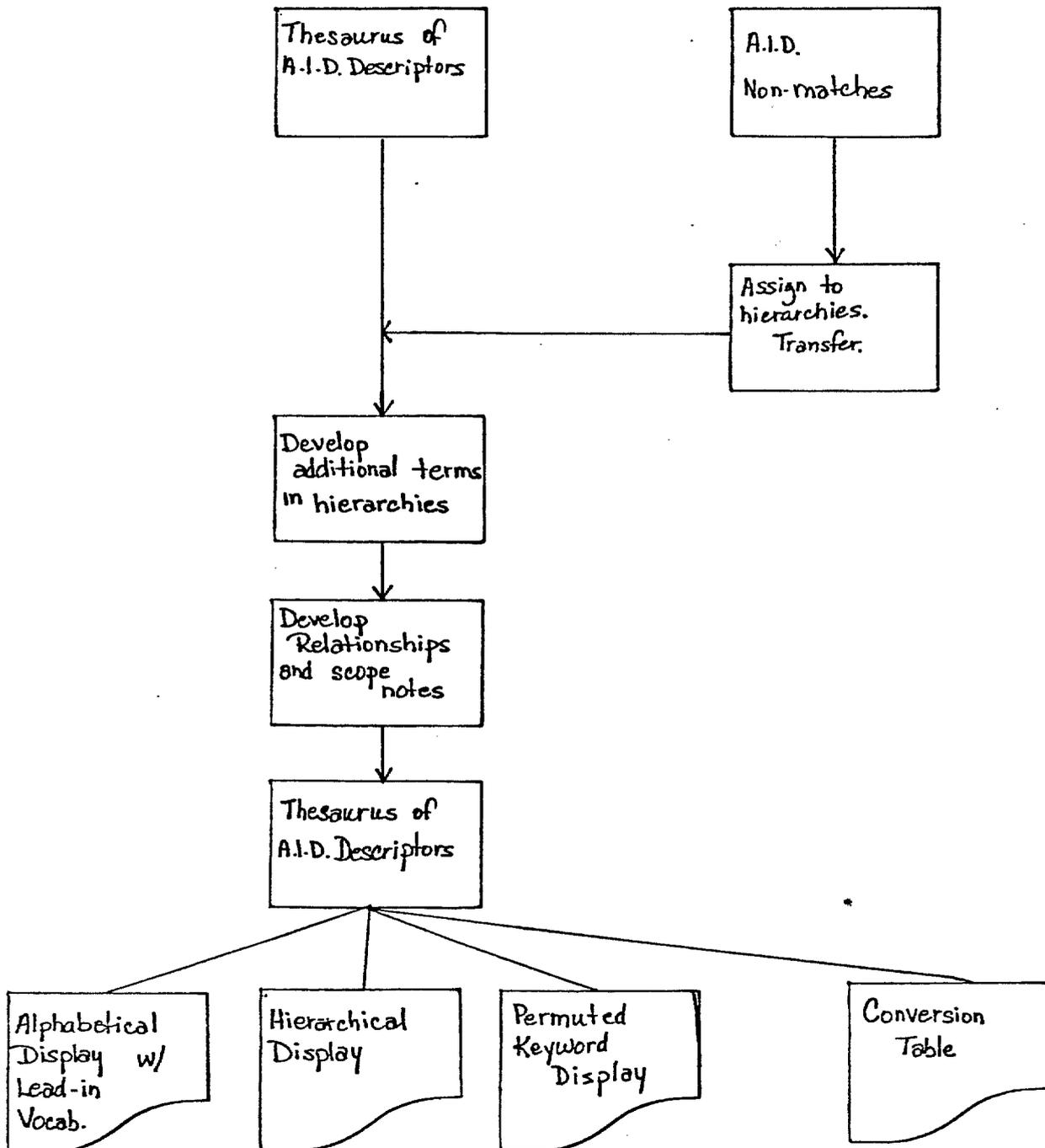


Step 7: Apply Semantic Factoring to Remaining Non-Matches.
Transfer Resulting Synonyms to Draft Thesaurus.



Step 8: Integrate the Remaining Non-Matches into Thesaurus.
Refine Hierarchies and Relationships.

Step 9: Display the Thesaurus of A.I.D. Descriptors.



LEXICOGRAPHIC ANALYSIS AND STANDARDS

The A.I.D. thesaurus will conform as much as possible to the ISO 2788 and ANSI Z39.19-1980 standards, i.e., it will adhere to the following conventions:

(1) Compound expressions will be entered in their natural word order, not in inverted order.

(2) Both precombined and elemental concepts will be incorporated. The decision to keep a precombined descriptor will be based on its frequency of use and the possible ambiguity of combining elemental descriptors to capture the concept.

(3) Descriptors will be in the noun form.

(4) The plural form will be used in most cases. The singular form will be used for processes and properties.

(5) Abbreviations will be avoided whenever possible.

(6) Punctuation marks will be minimized.

(7) Scope notes will be used to restrict the use of a descriptor and to exclude a possible meaning of a term. Scope notes will be designated by the abbreviation SN.

(8) Equivalence relations will be noted with the references USE and UF (Used For).

(9) Hierarchical relationships will be noted with the references BT and NT. BT-NT relationships apply to class/member and, on occasion, to part/whole relationships. The difference between generic and partitive relationships will not be distinguished.

(10) Associative Relationships will be noted with the reference RT. This relationship will be established between terms

which do not have consistent hierarchical or equivalent relationships but which for retrieval purposes should be cross referenced, e.g., HOSTAGES RT TERRORISM.

CONVERSION

MINISIS will accomodate the old A.I.D. indexing terms as forbidden terms, i.e., it will allow the searcher to enter an old term, and it will retrieve on the new term. The problem is that the old A.I.D. document records contain the old indexing vocabulary. What we propose to do is to use the Global feature of the MINISIS Modify Processor to change the old records to reflect the new descriptors. Careful records will be kept of the disposition of A.I.D. vocabulary so that this global conversion can be accomplished. ■

MINISIS will not accomodate a USE reference that contains two or more descriptors, e.g., it can easily handle MOISTURE USE HUMIDITY, but cannot handle ELECTRIC EQUIPMENT MAINTENANCE AND REPAIR TRAINING USE ELECTRIC EQUIPMENT + REPAIR AND MAINTENANCE + TRAINING. This sort of highly precombined descriptor will have to be globally modified in the document record, and will have to be noted in the hard copy of the thesaurus, but cannot be accounted for on-line. The searcher will have to enter the descriptor, be told that it is invalid, and then check the thesaurus.

There is another issue in the conversion process--converting the old vocabulary into the new vocabulary will not solve the problems caused by the overindexing done in the past. If, for example, the concept of "water in the air" has been incorrectly assigned to a document, it makes no difference if the term MOISTURE or the term HUMIDITY has been used to describe the concept. A conversion process will allow the searcher to use either term, but it will not correct the original indexing error. This correction can be accomplished only by re-examining the document.

CALENDAR OF EVENTS
MEASURING PROGRESS

Step 1: Acquire external source tapes and copyright releases.

Target Date: January 30

We have the Macrothesaurus tape from the IDRC, and a copyright release from the OECD in Paris.

We should already have a tape of the Unesco Thesaurus, but we need to apply for a copyright release to be able to use it. Work will proceed while we handle the copyright issue.

Step 2: Generate A.I.D. Thesaurus subset of terms.

Target Date: January 15

We currently have a data base on Inquire of the subject authority files used by A.I.D. The lists probably are somewhat out of date, but will be checked against the latest versions of the files now used by A.I.D., and will be changed accordingly. The resulting subset should number about 9,500 terms. After examining the terms for plurals and duplicates this subset should be reduced to about 8,000 terms.

Step 3: Establish data base design.

Target Date: Ongoing

There will be a significant level of effort in programming. Files currently on Inquire will have to be converted to MINISIS, all displays of the draft thesaurus will have to be determined, the conversion data base needs to be designed, and the day-to-day data entry work will have to be arranged. Programming support is essential to every step of the thesaurus construction task.

Step 4: Create the A.I.D. Thesaurus file.

Target Date: February 12

This step calls for matching the A.I.D. subset created in step 2 with the Unesco Thesaurus. This step will run 8,000 A.I.D. terms against 10,000 Unesco terms and should result in about 2,000 exact matches. These 2,000 records will contain broader term, narrower term, and top term information from Unesco which will be used to establish a rough hierarchical order among the terms.

The progress from this point forward can be measured in terms of the number of A.I.D. terms left in the unmatched file. At the completion of this step there should be about 6,000 terms left.

Step 5: Complete the hierarchies created in step 4.

Target Date: March 8

The matched terms in step 4 will be sorted into classified order using the Unesco notation and the hierarchies will be examined for completeness.

Step 6: Transfer synonyms to A.I.D. Thesaurus file.

Target Date: March 31

It is hoped that the transferring of synonyms will reduce the number of terms in the unmatched file by 40-50%. To the extent that these remaining terms are synonyms they will not add to the number of preferred terms in the final thesaurus.

Step 7: Apply semantic factoring to remaining unmatched terms.

Target Date: April 23

This step will temporarily create more terms, but many of them will be either synonyms, which will be transferred to the thesaurus

file as forbidden terms, or duplicates, which will be noted in the conversion process and then deleted. It is hoped that this step will reduce the unmatched terms again by half, leaving approximately 1,500 terms which will be integrated into the Thesaurus of A.I.D. Descriptors.

Step 8: Integrate the remaining A.I.D. terms into the A.I.D. Thesaurus file.

Target Date: May 31

The remaining terms will be old A.I.D. descriptors that are neither synonyms or duplicates of terms already in the Thesaurus. They will be placed into appropriate hierarchies, and the relationships between them and the other terms in the thesaurus will be developed. This step will be completed when there are no old A.I.D. descriptors left in the unmatched file.

Step 9: Display the Thesaurus of A.I.D. Descriptors

Target Date: June 25

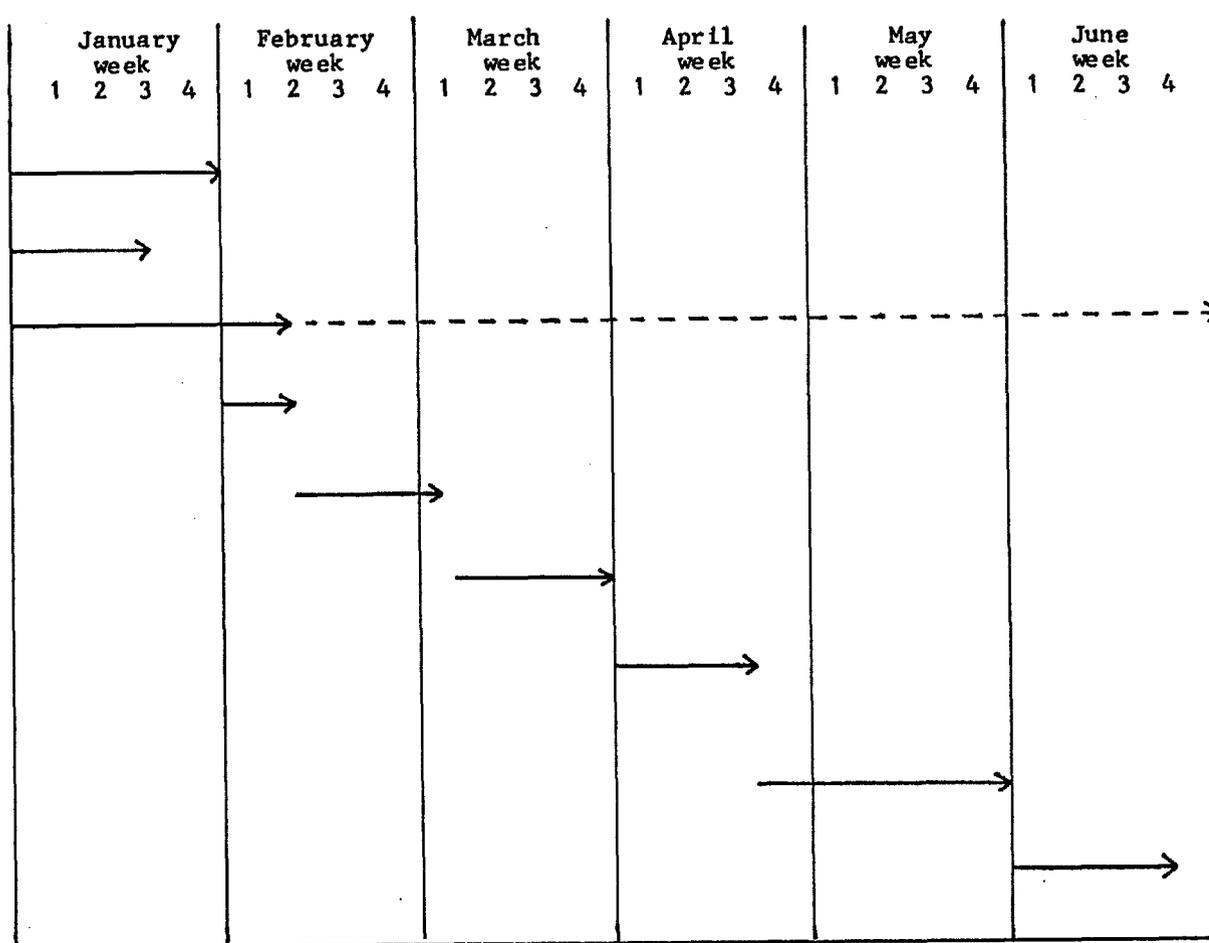
The thesaurus will be displayed in three formats: (1) alphabetical with lead-in vocabulary, (2) hierarchical, and (3) rotated descriptor.

The online and printed versions of the thesaurus will be available at almost the same time since it is the automated version that will create the printed version.

The progress made in this thesaurus construction project can be measured by: 1) noting which step we are on, and 2) counting the number of old A.I.D. terms that still have to be accounted for. We should start with approximately 9,500 terms, and will finish when we have accounted for all of them.

All the steps in the process (with the exception of step 1) must be performed sequentially, so a delay in one step could delay the completion of the project. We will direct our efforts to staying on schedule and to producing a high quality thesaurus by midyear.

CALENDAR OF EVENTS
TIMELINE



The Role of Other Thesauri in the Construction of the Thesaurus of A.I.D. Descriptors

The Thesaurus of A.I.D. Descriptors will be made up of the A.I.D. Descriptors currently in use at the Agency, as well as terms taken from other thesauri, especially Macrothesaurus. The Unesco Thesaurus will be used as a model for the development of the hierarchical structure of the thesaurus.

The final thesaurus will not be as complete as the 10,000-term Unesco Thesaurus because A.I.D. does not require as extensive coverage of the arts, humanities, and behavioral sciences. The A.I.D. thesaurus will be more specific, and will contain many more lead-in terms and scope notes than Macrothesaurus. While both Macrothesaurus and the Unesco Thesaurus will be used in the development process, the result will be a unique thesaurus that reflects the current needs of A.I.D.

SPECIFICITY THROUGH PRECOMBINATION AND POSTCOMBINATION IN DIS, MACROTHESAURUS, AND UNESCO

DIS

Agricultural Inputs
 Agricultural Machinery
 Grain Handling Equipment
 > Moisture Meter

MACROTHESAURUS

Agricultural Equipment
 Agricultural Machinery
 Tractors

-AND-

Precision Instruments
 > Measuring Instruments

-AND-

Grains
 Use Cereals

-OR-

Food Processing
 Grain Processing

UNESCO

Chemical analysis
 Chemical variables measurement
 pH measurement
 > Moisture measurement

-AND-

Equipment
 Machines
 Agricultural machinery

-OR-

Grain crops
 Cereals

-19-

This is an example of a highly specific descriptor in DIS that can be in Unesco and Macrothesaurus only by concept combination.

DIS has the concept of an instrument that measures the moisture during grain storage, and this concept is expressed in one descriptor. The concept can be created in Macrothesaurus and Unesco by using other descriptors in combination.

SPECIFICITY OF DIS, MACROTHESAURUS, & UNESCO

DIS

> Adoption Service
Operation Babylift

MACROTHESAURUS

Social Administration
Social Services
Care of the Aged
> Child Care
Health Services
Orphanages

Social Policy
Family Policy
Child Care
Maternity Benefits

UNESCO

Social welfare
Social services
Social security
Personal social services
Child welfare
> Adoption
Adopted children
Foster care
Residential child care

Civil law
Family law
Adoption

DIS has more specific terms than either Macrothesaurus or Unesco, but has a less developed structure.

Macrothesaurus does not have the concept of "adoption" at all; it is presumably an aspect of child care as a social service.

Unesco has the concept of adoption, and although it does not contain a reference to "Operation Babylift", it has the most complete structure.

DISPLAYS OF THE THESAURUS OF A.I.D. DESCRIPTORS

A small section of the Macrothesaurus has been loaded on MINISIS to show how the (future) Thesaurus of A.I.D. Descriptors will appear to the user.

Attached are printouts of screens which show some sample searches using Macrothesaurus terms. The Q> points to what the searcher entered, and P and T refer to the number of records retrieved. Searching is possible on BT, NT, and RT. Truncation is performed by adding the @ sign to the root of the term, as in ECONOM@. Note the different sets retrieved with the use of an ANY table and with truncation (ANY HEALTH and HEALTH@).

Following the screens are copies of the three sections of Macrothesaurus. Although the Thesaurus of A.I.D. Descriptors will contain different terms and relationships, it should appear in a format very similar to Macrothesaurus.

```

> WAGES
WAGES F=3
SALAIRES P=0
  1: P=3 T=3
2> BT WAGES
WAGES P=3
INCOME P=9
  2: P=11 T=11
3> 1 OR 2
  3: P=11 T=11
4> ECONOME
ECONOMIC ADMINISTRATION P=2
ECONOMIC ANALYSIS P=2
ECONOMIC ASPECTS P=10
ECONOMIC CONDITIONS F=23
ECONOMIC DEVELOPMENT P=65
ECONOMIC EQUILIBRIUM P=1
ECONOMIC FORECASTS P=2
ECONOMIC GROWTH P=15
ECONOMIC IMPLICATIONS P=9
ECONOMIC INDICATORS P=1
ECONOMIC INFRASTRUCTURE P=2
ECONOMIC INTEGRATION P=1
ECONOMIC MODELS P=3
ECONOMIC PLANNING P=7
ECONOMIC POLICY P=3
ECONOMIC RECONSTRUCTION P=1
ECONOMIC RESEARCH P=1
ECONOMIC RESOURCES P=2
ECONOMIC STRUCTURE P=5
ECONOMIC SURVEYS P=2
ECONOMIC SYSTEMS P=1
ECONOMIC THEORY P=4
ECONOMICS P=1
ECONOMICS OF EDUCATION P=4
ECONOMISTS P=1
  4: P=121 T=121
5> NATURAL RESOURCES
NATURAL RESOURCES P=9
RESSOURCES NATURELLES P=1
  5: P=10 T=10
6> NT NATURAL RESOURCES
NATURAL RESOURCES P=9
RESSOURCES NATURELLES P=1
ENERGY RESOURCES P=1
RESSOURCES ENERGETIQUES P=1
SOIL RESOURCES P=1
  6: P=12 T=12
7> RT NATURAL RESOURCES
NATURAL RESOURCES P=9
RESSOURCES NATURELLES P=1
ECONOMIC RESOURCES P=2
HUMAN RESOURCES P=9
RESSOURCES HUMAINES P=1
  7: P=18 T=18
    
```

Sample of Screen Displayed
to Searcher Using Query
Processor and Thesaurus.

Key:

Q> Statement Entered by Searcher

P= Number of Postings

T= Total Number of Records
Fulfilling Requirement

@ Truncation Symbol

> EDUCATION AND (INCOME OR WAGES)

EDUCATION P=440

* EDUCATION NON-FORMELLE P=2

EDUCATION OF WOMEN P=5

EDUCATIONAL ADMINISTRATION P=5

EDUCATIONAL ASPECTS P=1

EDUCATIONAL DEVELOPMENT P=21

EDUCATIONAL FACILITIES P=5

EDUCATIONAL GUIDANCE P=1

EDUCATIONAL INSTITUTIONS P=5

EDUCATIONAL NEEDS P=7

EDUCATIONAL OPPORTUNITIES P=4

EDUCATIONAL PLANNING P=29

EDUCATIONAL POLICY P=18

EDUCATIONAL REFORMS P=12

EDUCATIONAL RESEARCH P=8

EDUCATIONAL SYSTEMS P=31

EDUCATIONAL TECHNOLOGY P=3

EDUCATIONAL TELEVISION P=1

INCOME P=9

REVENU P=0

WAGES P=3

SALAIRES P=0

8: P=11 T=11

> HEALTH

HEALTH P=32

HEALTH ADMINISTRATION P=1

HEALTH CENTRES P=3

HEALTH SERVICES P=36

9: P=64 T=64

> ANY HEALTH

HEALTH P=32

SANTE P=1

CHILD CARE P=1

AIDE A L'ENFANCE P=1

DEFICIENCY DISEASES P=1

DISEASE CONTROL P=5

DISEASES P=2

EPIDEMIOLOGY P=1

HEALTH P=32

SANTE P=1

HEALTH ADMINISTRATION P=1

HEALTH CENTRES P=3

MATERNAL AND CHILD HEALTH P=3

MEDICINE P=2

PRENATAL CARE P=1

PREVENTIVE MEDICINE P=1

10: P=42 T=42

> \$

EXIT

MINISIS QUERY TERMINATED

Sample Page. Macrothesaurus. Alphabetical Display.

ABILITY GROUPING
GROUPEMENT PAR APTITUDES / AGRUPAMIENTO POR
APTITUD - 06.04.10

UF: STREAMING
RT: CLASSES

ABORIGINAL POPULATION
POPULATION AUTOCHTONE / POBLACION ABORIGEN -
14.03.01

SN: DENOTES PEOPLE BORN IN THE COUNTRY IN WHICH
THEY ARE LIVING.

BT: POPULATION
NT: INDIGENOUS POPULATION

ABORTION
AVORTEMENT / ABORTO - 14.05.02

NT: LEGAL ABORTION

ABRASIVES
ABRASIFS / ABRASIVOS - 08.12.08

ABSENTEEISM
ABSENTEISME / AUSENTISMO - 13.05.00

RT: LEAVE OF ABSENCE

ABSORPTIVE CAPACITY
CAPACITE D'ABSORPTION / CAPACIDAD DE ABSORCION -
11.02.06

RT: DEVELOPMENT AID
INVESTMENTS

ABSTRACT
RESUME / RESUMEN ANALITICO - 19.02.07

BT: SECONDARY DOCUMENTS

ABUNDANCE
ABONDANCE / ABUNDANCIA - 03.02.05

RT: AFFLUENT SOCIETY
WEALTH

ACADEMIC FREEDOM
LIBERTE DE L'ENSEIGNEMENT / LIBERTAD DE
ENSEÑANZA - 04.02.02

BT: CIVIL LIBERTIES
RT: EDUCATIONAL SYSTEMS

ACAST
CCAST / CCACT - 01.03.02
SN: ADVISORY COMMITTEE FOR THE APPLICATION OF
SCIENCE AND TECHNOLOGY TO DEVELOPMENT

BT: ECOSOC
RT: SCIENCE
TECHNOLOGY

ACCELERATED COURSES
COURS ACCELERES / CURSOS ACCELERADOS - 06.05.01

UF: INTENSIVE COURSES
BT: COURSES

ACCESS TO CULTURE
ACCES A LA CULTURE / ACCESO A LA CULTURA -
05.02.03

RT: CULTURE
RIGHT TO EDUCATION

ACCESS TO EDUCATION
ACCES A L'EDUCATION / ACCESO A LA EDUCACION -
06.02.02

RT: EDUCATIONAL OPPORTUNITIES
EDUCATIONAL SELECTION
RIGHT TO EDUCATION

ACCESS TO INFORMATION
ACCES A L'INFORMATION / ACCESO A LA INFORMACION
- 19.01.01

RT: DATA PROTECTION
INFORMATION
INFORMATION DISSEMINATION
INFORMATION EXCHANGE
INFORMATION SOURCES
INFORMATION USERS

ACCESS TO MARKET
ACCES AU MARCHÉ / ACCESO AL MERCADO - 09.03.01

RT: BOYCOTT
EMBARGO
MARKET
TRADE AGREEMENTS

ACCIDENT INSURANCE
ASSURANCE ACCIDENT / SEGURO DE ACCIDENTES -
11.02.03

BT: INSURANCE
RT: ACCIDENTS

ACCIDENT PREVENTION
- 13.04.00
USE: OCCUPATIONAL SAFETY

ACCIDENTS
ACCIDENTS / ACCIDENTES - 02.04.02

BT: SOCIAL PROBLEMS
NT: OCCUPATIONAL ACCIDENTS
RT: ACCIDENT INSURANCE
CAUSES OF DEATH
DAMAGE
SAFETY

ACCLIMATIZATION
ACCLIMATATION / ACLIMATACION - 17.02.01

RT: CLIMATE

ACCOUNTANTS
COMPTABLES / CONTADORES - 13.09.09

BT: OFFICE WORKERS
RT: ACCOUNTING

ACCOUNTING
COMPTABILITE / CONTABILIDAD - 12.09.00

NT: COST ACCOUNTING
NATIONAL ACCOUNTING
PUBLIC ACCOUNTING
RT: ACCOUNTANTS
AUDITING

ACCT
ACCT / ACCT - 01.03.03

Sample Page. Macrothesaurus. Hierarchical Display.

ASSOCIATIONS<CONT>

.. TEACHER ASSOCIATIONS

ATTITUDES

. EMPLOYEES ATTITUDES
. MANAGEMENT ATTITUDES

AUTOMATION

. LIBRARY AUTOMATION

BALANCE OF PAYMENTS

. BALANCE OF TRADE
. CAPITAL MOVEMENTS
.. CAPITAL TRANSFERS
.. EXPORT OF CAPITAL
.. INTERNATIONAL INVESTMENTS
... FOREIGN INVESTMENTS
.. REPATRIATION OF CAPITAL
. EXPORTS
. IMPORTS
. INVISIBLE TRANSACTIONS

BASIC EDUCATION

. CIVIC EDUCATION
. CONSUMER EDUCATION
. ENVIRONMENTAL EDUCATION
. HEALTH EDUCATION
. HOME ECONOMICS
.. CHILD REARING
.. FOOD PREPARATION
. LITERACY
.. FUNCTIONAL LITERACY
. PHYSICAL EDUCATION
. POLITICAL EDUCATION
. SAFETY EDUCATION
. SEX EDUCATION

BEHAVIOUR

. CONSUMER BEHAVIOUR
. ECONOMIC BEHAVIOUR
. POLITICAL BEHAVIOUR
. SEXUAL BEHAVIOUR
. SOCIAL BEHAVIOUR
. STUDENT BEHAVIOUR
.. STUDENT PARTICIPATION

BEHAVIOURAL SCIENCES

. PSYCHOLOGY
.. INDUSTRIAL PSYCHOLOGY
.. PSYCHOLOGY OF EDUCATION
. SOCIAL PSYCHOLOGY

BEVERAGES

. ALCOHOLIC BEVERAGES
.. BEER
.. WINE
. NON-ALCOHOLIC BEVERAGES
.. COCOA
.. COFFEE
.. FRUIT JUICES
.. MILK
... MILK POWDER
.. MINERAL WATERS
.. TEA

BUILDINGS

. EDUCATIONAL BUILDINGS
.. SCHOOL BUILDINGS

BUILDINGS<CONT>

.. UNIVERSITY BUILDINGS
. FARM BUILDINGS
.. GREENHOUSES
.. SILOS
. INDUSTRIAL BUILDINGS
. PREFABRICATED BUILDINGS

BUSINESS CYCLE

.. SEASONAL FLUCTUATIONS

CAPITAL

. FOREIGN CAPITAL
. INDUSTRIAL CAPITAL
. WORKING CAPITAL

CARBOHYDRATES

. CELLULOSE
. STARCH
. SUGAR
.. BEET SUGAR
.. CANE SUGAR

CARDS

. PUNCHED CARDS

CHEMICALS

. HYDROCARBONS
.. BENZENE
.. METHANE
. PETROCHEMICALS
. PHARMACEUTICALS
.. DRUGS
... ANTIBIOTICS
.. NARCOTICS
... OPIUM
.. SERUMS
.. VACCINES

CHILDREN

. INFANTS

CLASSES

. EXPERIMENTAL CLASSES

CLASSIFICATION

. JOB CLASSIFICATION
. SOIL CLASSIFICATION

CLEANING AGENTS

. DETERGENTS
. SOAP

CLIMATIC ZONES

. ARID ZONE
. COLD ZONE
. EQUATORIAL ZONE
. FRIGID ZONE
. HUMID ZONE
. SEMI-ARID ZONE
. SUBTROPICAL ZONE
. TEMPERATE ZONE
. TROPICAL ZONE

CODES

. LABOUR CODE

ADMINISTRATION

ADMINISTRATION OF EDUCATION
- 04.03.02
USE: EDUCATIONAL ADMINISTRATION
ADMINISTRATION OF JUSTICE - 04.03.02
AGRICULTURAL ADMINISTRATION - 04.03.02
DEVELOPMENT ADMINISTRATION - 04.03.02
ECONOMIC ADMINISTRATION - 04.03.02
EDUCATIONAL ADMINISTRATION - 04.03.02
FINANCIAL ADMINISTRATION - 04.03.02
FISCAL ADMINISTRATION - 04.03.02
HEALTH ADMINISTRATION - 04.03.02
INDUSTRIAL ADMINISTRATION - 04.03.02
LABOUR ADMINISTRATION - 04.03.02
PERSONNEL ADMINISTRATION
- 13.02.02
USE: PERSONNEL MANAGEMENT
PUBLIC ADMINISTRATION - 04.03.02
SOCIAL ADMINISTRATION - 04.03.02

ADMINISTRATIVE

ADMINISTRATIVE ASPECTS - 04.03.04
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ADMISSION

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ADOLESCENCE
- 14.02.02
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ADULT

ADULT EDUCATION - 06.03.05

ADULTS

ADULTS - 14.02.02

ADVANCEMENT

ADVANCEMENT
- 13.02.02
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ADVANCEMENT OF EDUCATION
- 06.02.03
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- 01.02.01
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AFFILIATION

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AFFLUENT

AFFLUENT SOCIETY - 03.02.05

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AFGHAN

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AFGHANISTAN

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AFRASEC

AFRASEC - 01.03.03

AFRICA

AFRICA - 01.04.02
AFRICA SOUTH OF SAHARA - 01.04.02
CENTRAL AFRICA - 01.04.02
EAST AFRICA - 01.04.02
ENGLISH SPEAKING AFRICA - 01.04.02
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- 01.04.02
USE: NAMIBIA
SOUTHERN AFRICA - 01.04.02
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AFRICAN

AFRICAN - 14.03.02
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AGE

AGE - 14.02.02
AGE DISTRIBUTION - 14.02.02
AGE GROUPS - 14.02.02
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MINIMUM AGE - 14.02.02
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AGED

AGED - 14.02.02