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**DATA INTEGRATION IN A
DATA ACQUISITION SYSTEM
FOR MATERIAL PROPERTY
DATABASE**

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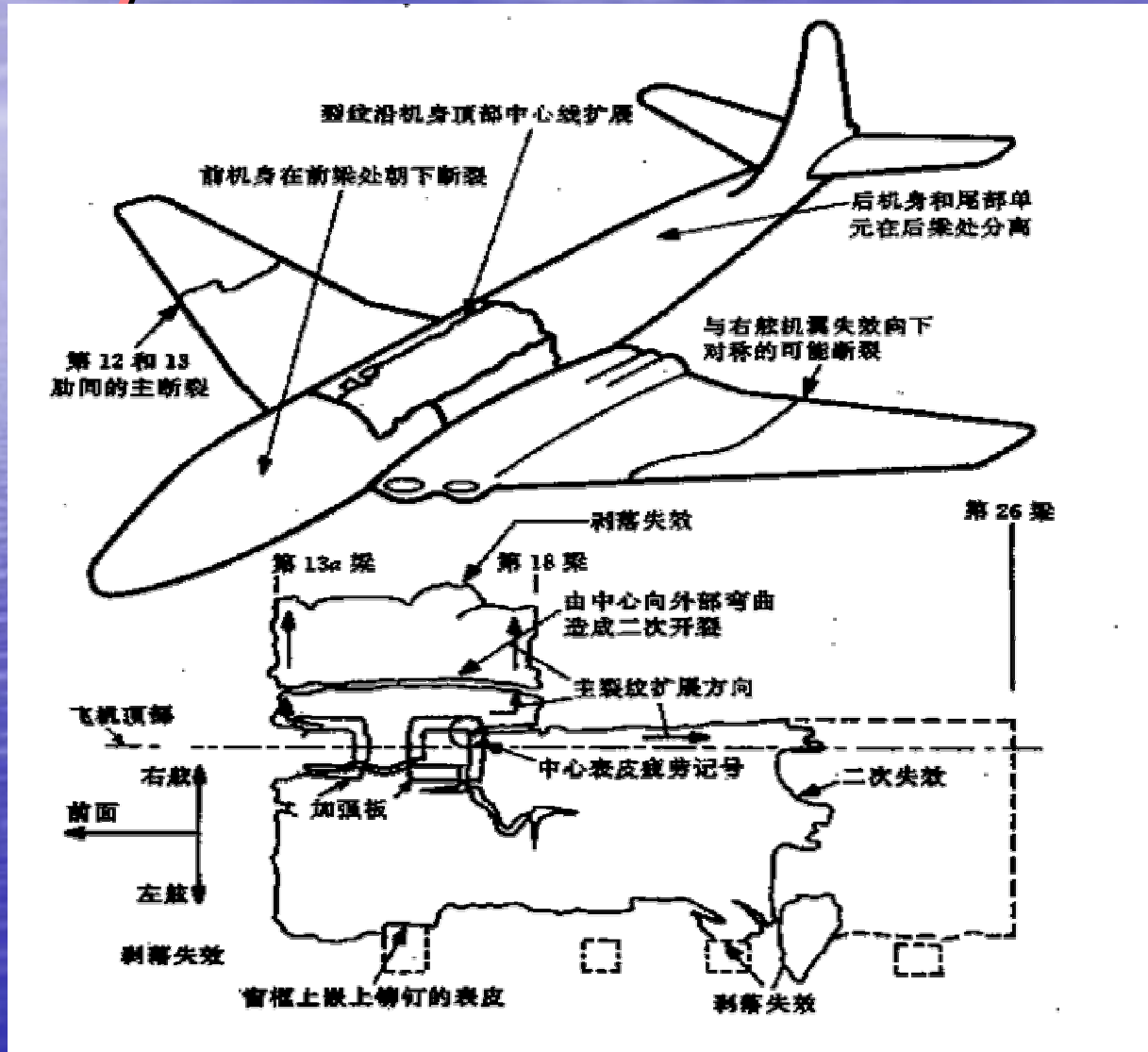
Abstract

- The experimental data of material property from testing laboratory are becoming more and more important. They are widely used in the material property model, the material product quality control and engineering designation. However, it is difficult sometimes to collect these data from labs because the computer platforms are very different. During the past a few decades, they developed their own databases or e-files for their daily testing data. The data format, field name or unit for the same property item could be different. In this paper, the authors tried to develop a data integrate system based ASP. From this system, the data from various sources, such as the e-file of EXCEL and databases of DBASE III and FOXpro, are collected and put into the data warehouse designed for material property based on SQL Sever.

Investigation Purpose

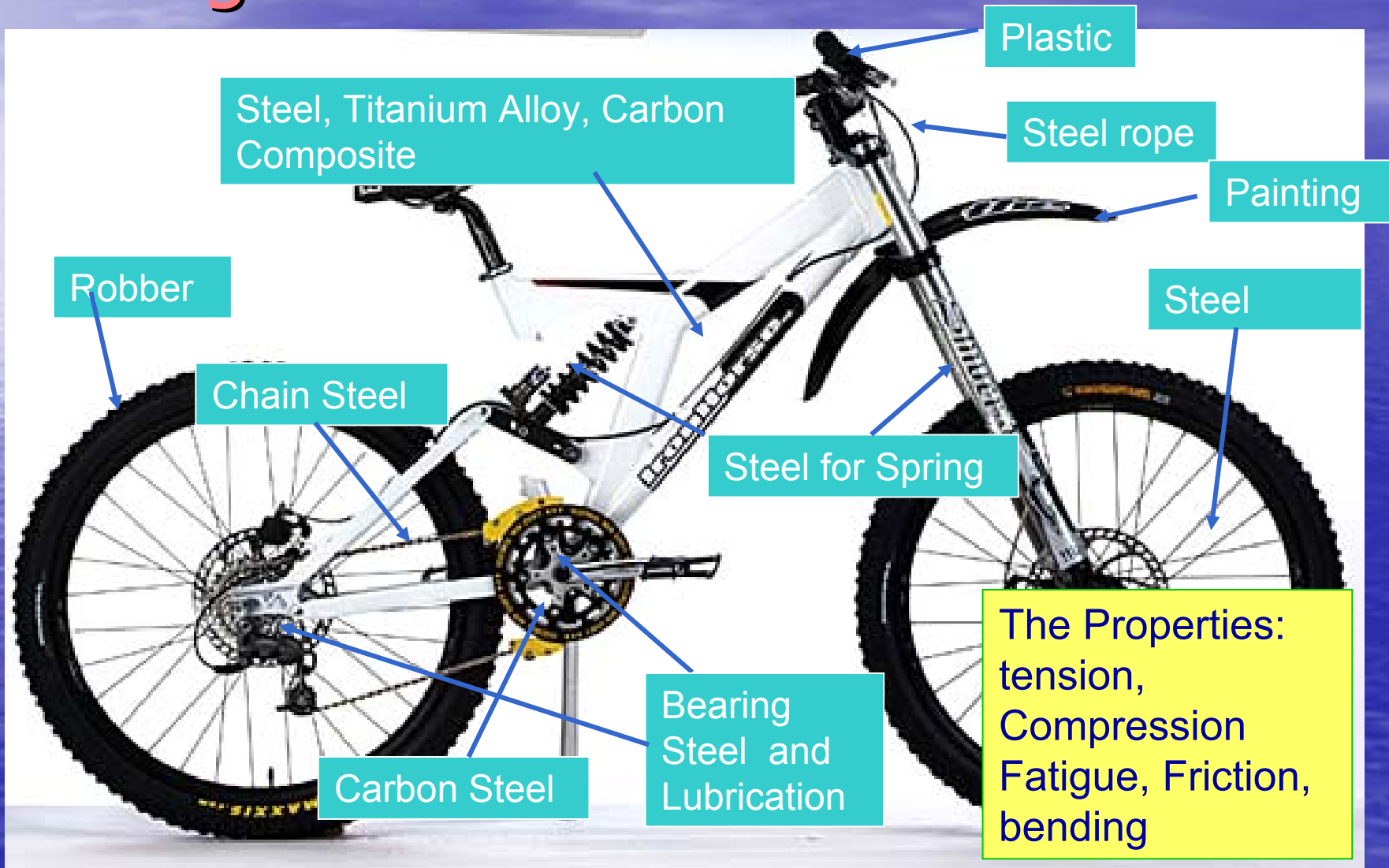
- The meaningful data of material properties should be a integrated data set. Include the original state of raw material, the process procedure and the testing environment and loading... The collected data should have the parameters and results covered all the above aspects. The data acquisition could be a long continuous work so that the information of material could be used for statistics and meaningful.

The Data of Material Property in the Safety Evaluation for Vehicles



Petroski, 1996

Data of Material Property in the Designation of new Product



Problems when collect data

- The information of material in a industry system mostly have to be got together from many groups, in each one only a subclass can be found. During the past decades, every group developed their own computer system to store their daily data with various formats. These data , if wanted to collect, a lots of exchanging work are needed. How to organize these data for the convenience of collecting and retrieving?

The included items of data set for material property

(1) Identifications

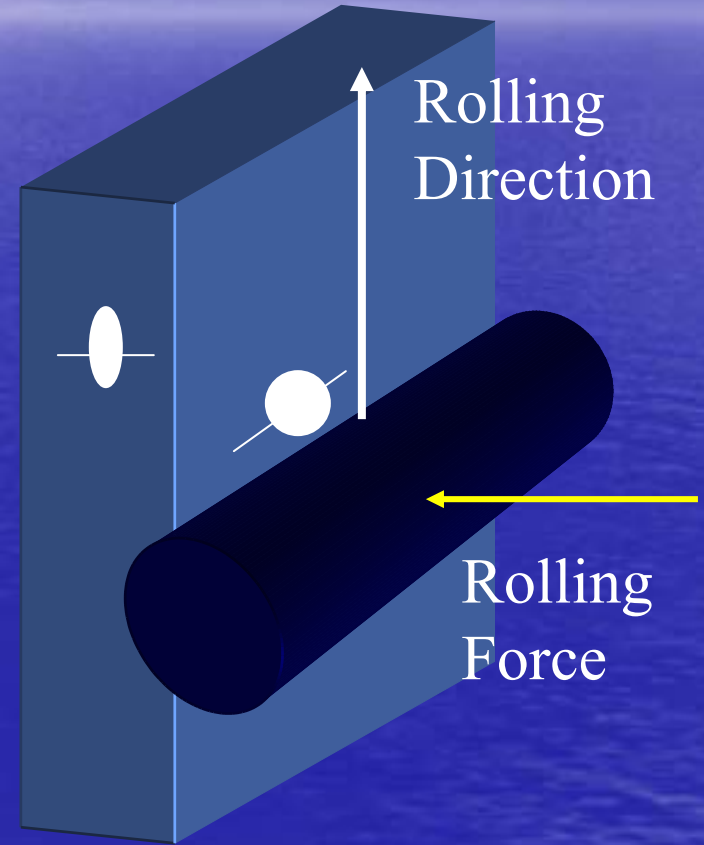
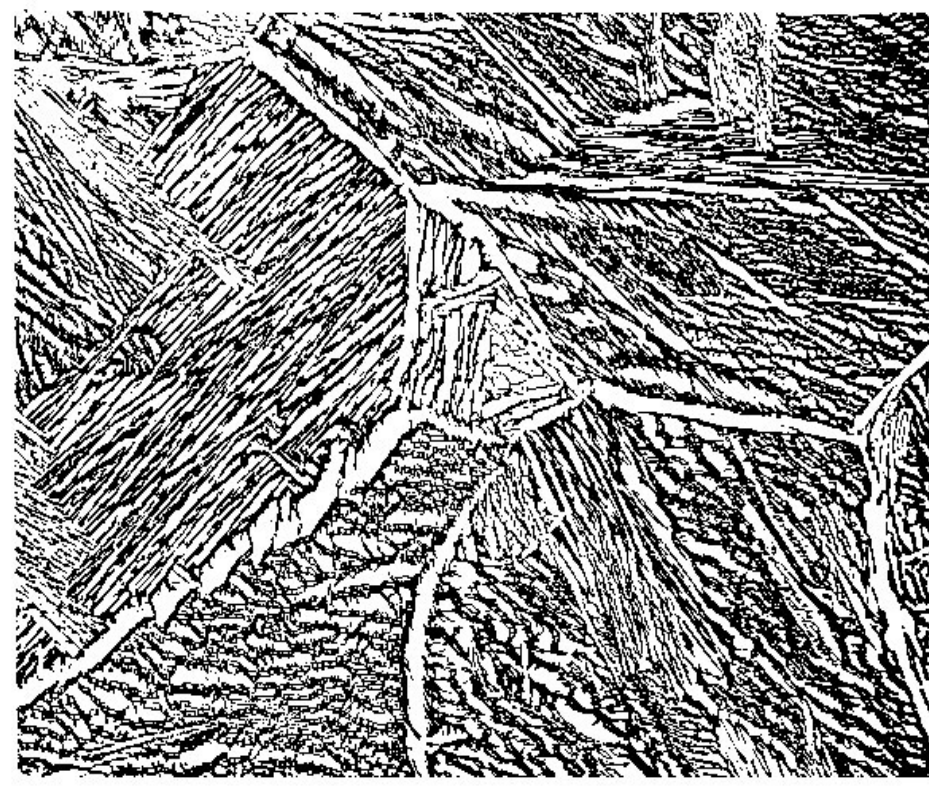
These are necessary for the information organization

The identification of material, manufacturing factory, the lab of the testing works.

(2) The background parameters of the material.

Such as: the chemical components, the metallurgical procedures, the mill heat treatment, the rolling procedure

The influence of heat treatment and deformation process



The included items of data set for material property

(3) The preparation of specimen

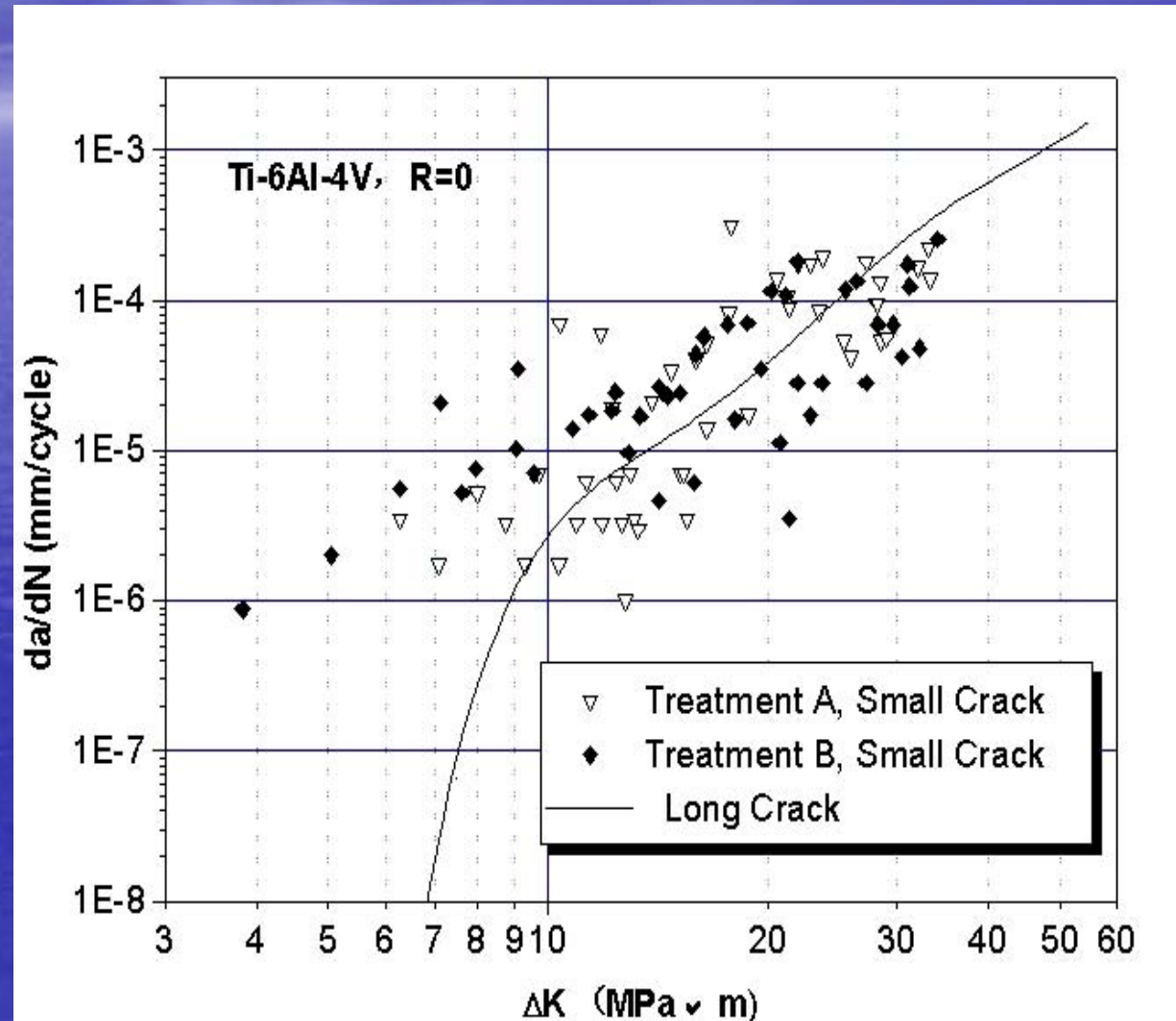
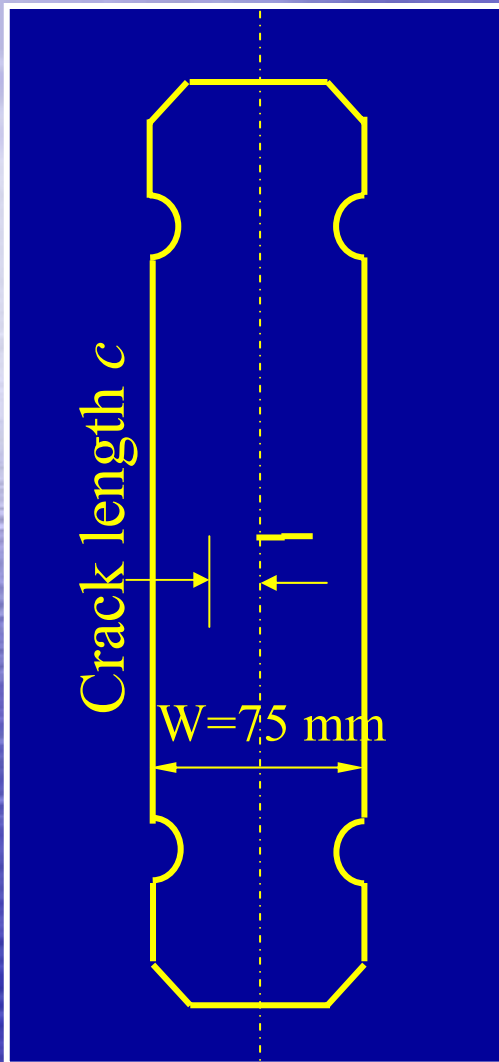
The machinery of specimen, the configuration, the surface, shape, with or without notches

(4) The testing conditions

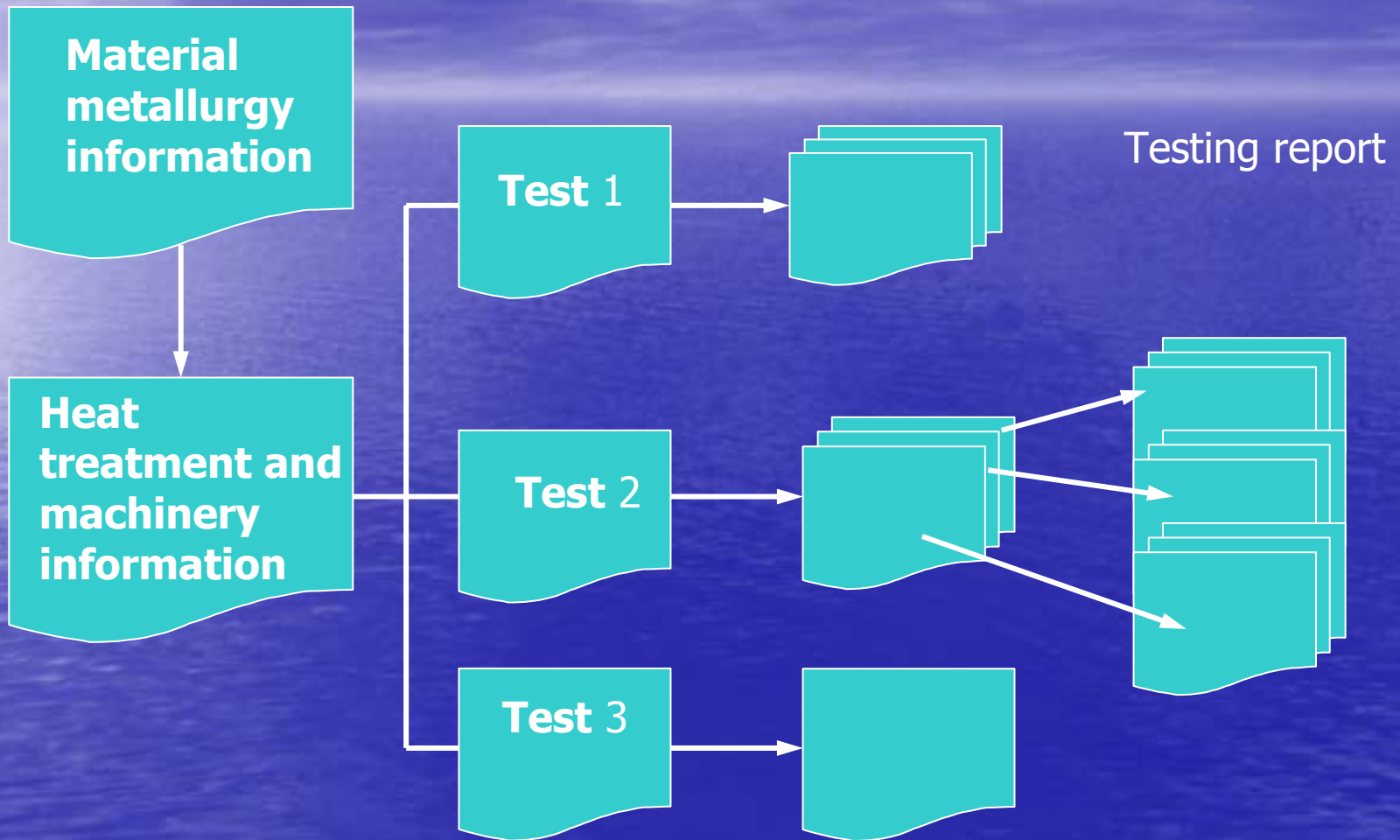
Such as: the temperature, the environment, the applied loading, the speed, the measurement

(5) The data process

Specimen and Testing Results



An integrated data set



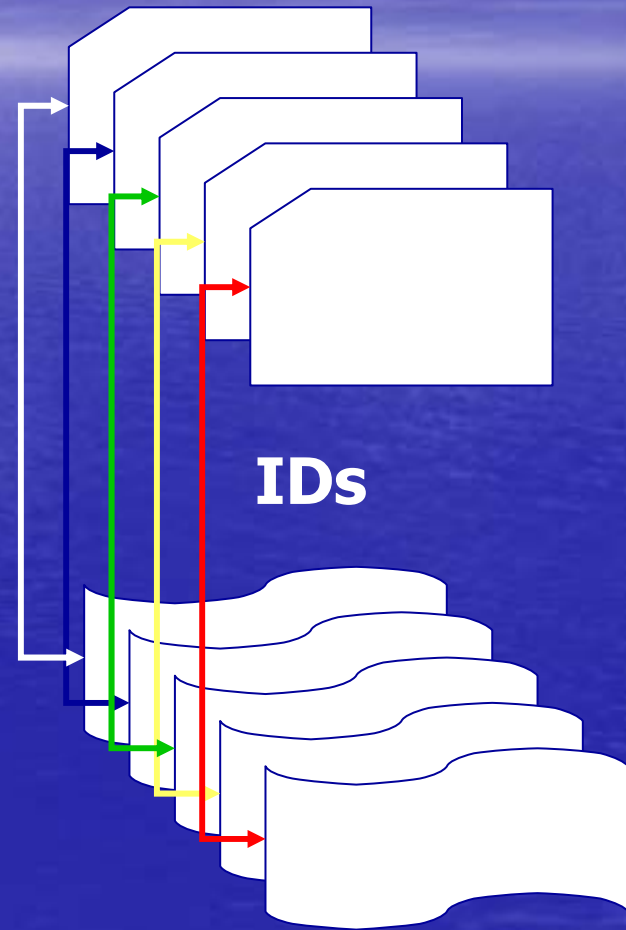
The information collection in group

Group one

Material
metallurgy
information

Group two

Heat
treatment
and
machinery
information



The data collection from Labs

Lab one

Test
report

Test
Records

MS EXCEL

Lab two

Test
report

Test
Records

Debase III

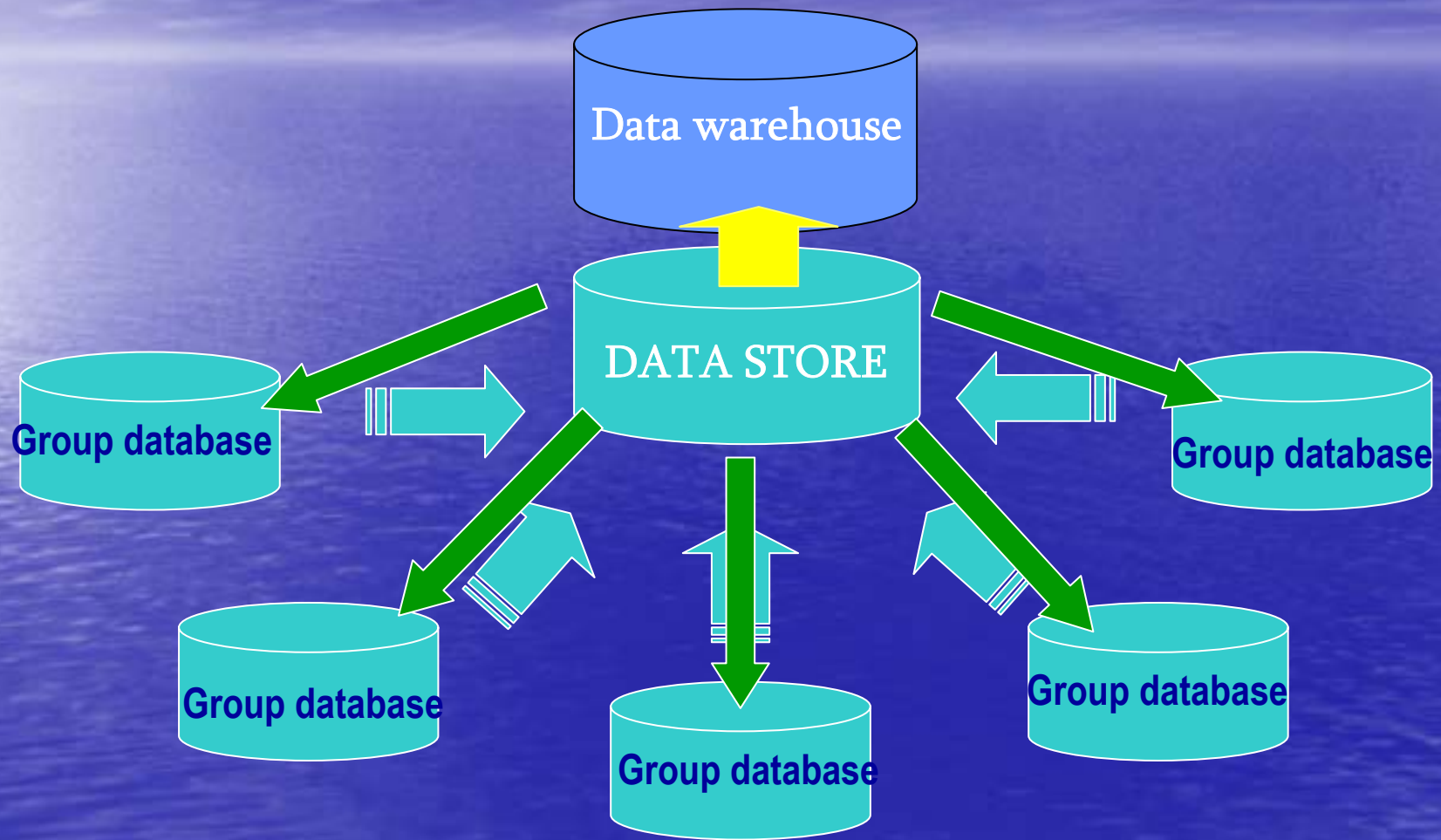
Lab three

Test
report

Test
Records

MS ACCESS

An integrated system for data acquisition



*Thank you for
your attention
on this paper*