**Universal "Navigation Data Message" - ideas**

* Have at hand a collection of "data types" that could be used to build an entire message of any kind
* These data types are entities or structure as small as possible
* They may be already present (or not) in existing NAV standards
* Examples could be
  + Quaternion
  + Euler angles = {rotation sequence, angles}
  + Position
  + Position velocity
  + Reference frame
  + Time
  + Event
  + Orbit parameters
    - Keplerian elements
    - Equinoctial elements
      * ...
    - <other types>
* Measurements
  + ...
* Attitude :
  + Quaternion
  + OR Euler angles
  + OR ...
* Position covariance

And so on...

There could also be other types of information such as:

* Mass
* Inertia
* Area
* Area to mass ratio
* Temperature

Or also indicators:

* Validity indicator
* Quality indicator

In some context we may also want description information (what it is, what is it used for)

* Example : predicted, reconstructed, ...

It is assumed that it is possible to have a collection of data types that is large enough to make it possible to build all existing (or future) books.

Otherwise it may mean that the task is an impossible task.

A source of information could be:

* all the existing books
* The PRM in particular which tends to have such an approach and defines various kinds of elementary types.

One main question is: what do we want to do with all this ?

Answers could be :

* Gather some information to form a simple message
  + Seems difficult as the message should be self contained to be understandable by the recipient.
* Be able to build a new "standard" (=message template) for a particular application
  + It should then be possible to describe the entire structure of the document including header, meta data section, data section .... using some predefined syntax
  + The standard would tell the user how to build a message template and how to build an actual message according to that template
  + It should then be possible to rebuild all existing standards (ODM, ADM, ...) using the defined rules

In actual messages there could be:

* simple data (name-value pairs)
* AND/OR time varying data (as in the OCM: time, value1, value2, ...
* AND/OR data varying as a function of some parameter

We may wish to define the contents of the data lines as we wish:

* + For example: <TIME> <POSITION> <QUATERNION>

We want want to generate formats such as KVN our XML.

Let's go !