Universal database
of Unified System of Information on the World Ocean

authors:
Alexandr Kobelev,
Evgeniy Vjazilov

VPN

Information loading

- Resources Data
- Metadata: Resources, Elements, Codes
- Control Information

K2

K6

UDB
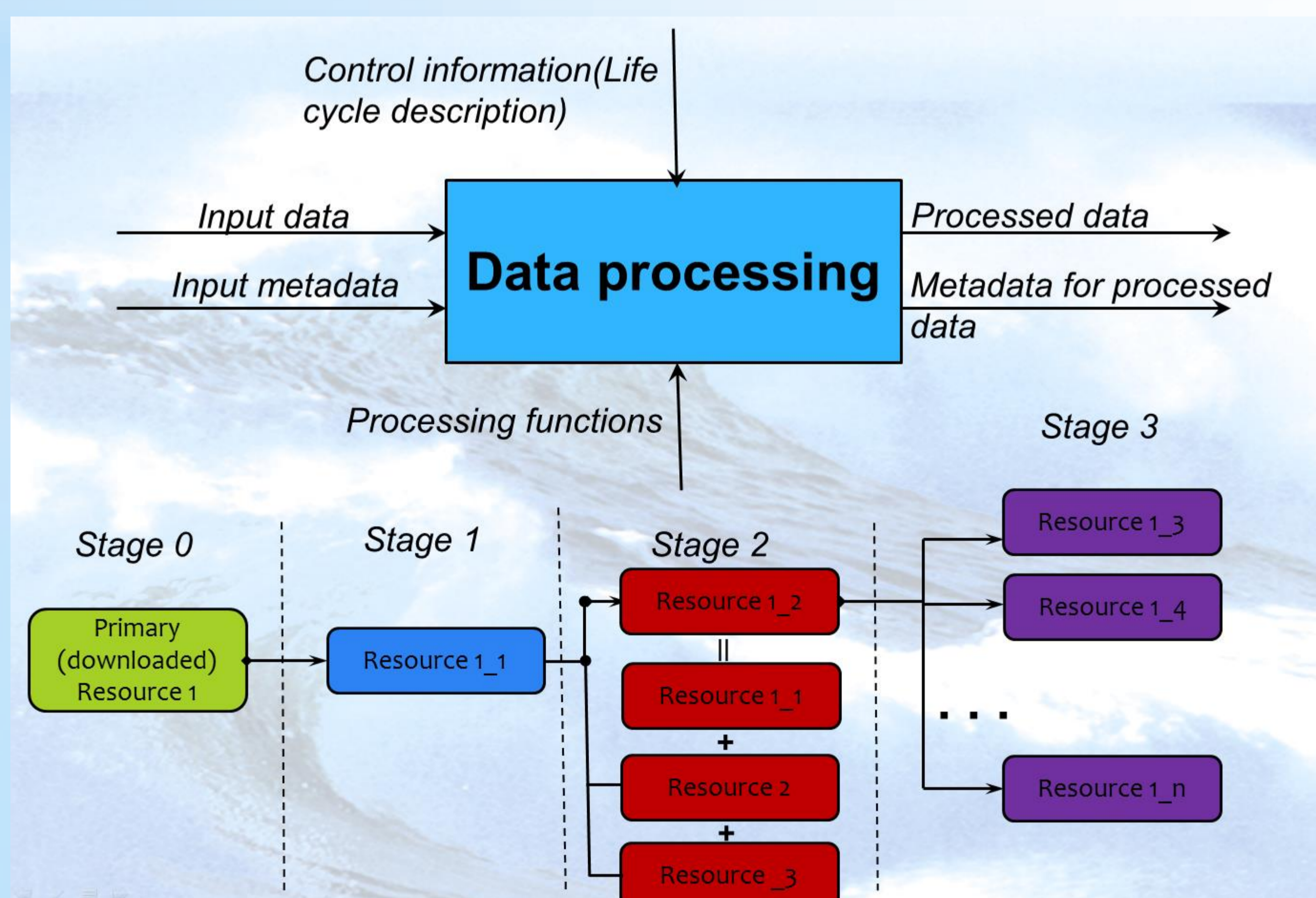
K5

K3

K1

K4

Users group

Internet
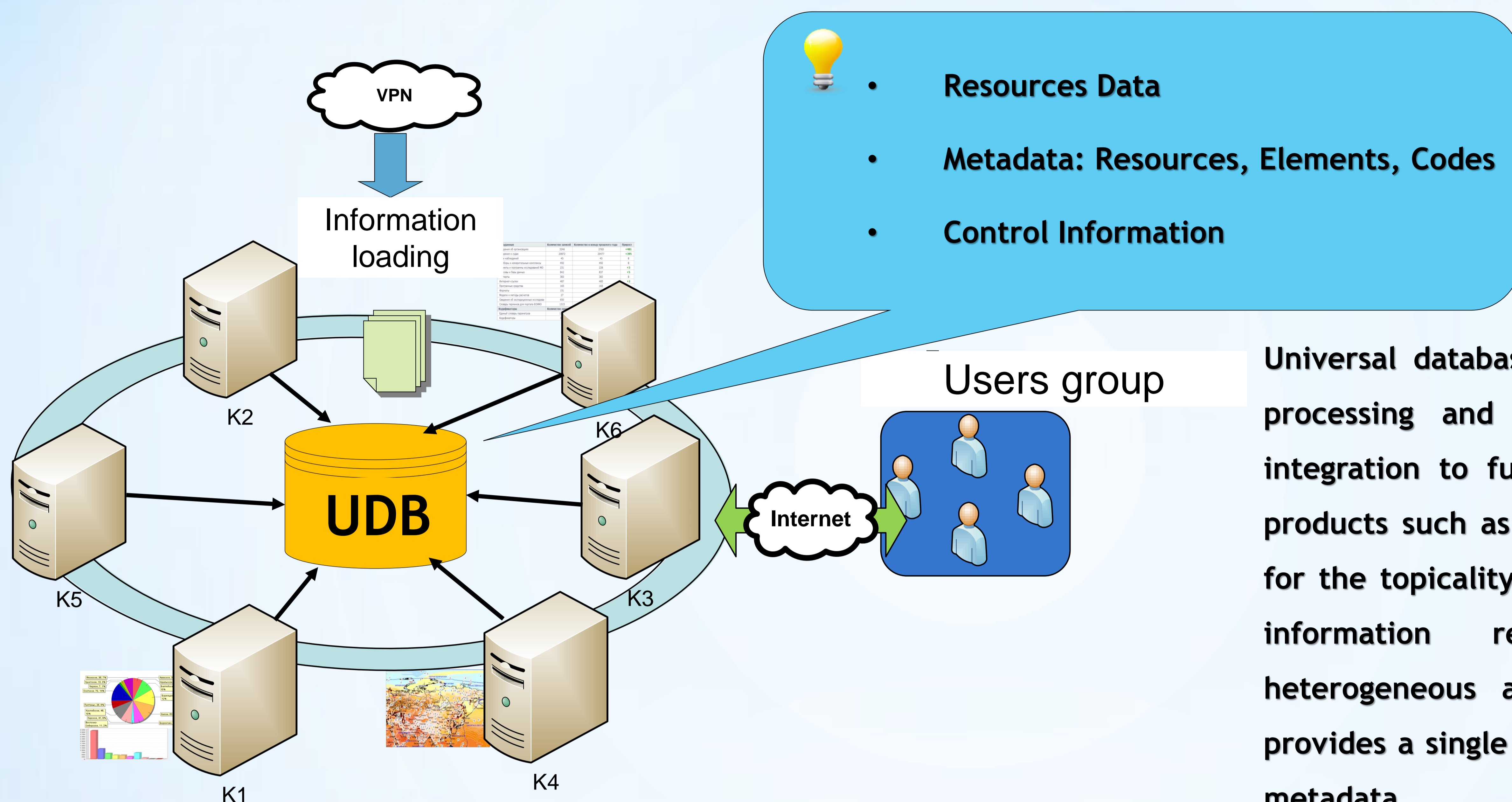
Universal database (UBD) is for caching, pre-processing and information resources data integration to further release of information products such as geo-services. It's responsible for the topicality, integrity and consistency of information resources obtained from heterogeneous and distributed sources and provides a single point of access to it data and metadata.

UBD collects data of several thousand information resources that consist of tens of system elements. The elements composition of information resource may vary with time. You cannot manually track changes in each information resource and timely adapt UBD table for correct data loading. Therefore, the creation of structures for data storage (tables), as well as it's adaptation to changes in data source performed automatically based on metadata about the information resources and their elements.

Data table structure

Parameter ID	Data Type	Description
M4201	VARCHAR(100)	Platform ID
M4202	VARCHAR(55)	Platform name
M4312	NUMERIC(11,5)	Longitude
M4311	NUMERIC(10,5)	Latitude
P0074_00	NUMERIC(6,3)	Wind speed: value
P0075_00	INTEGER(3)	Wind speed: direction
P0076_00	NUMERIC(6,3)	Wind speed: u-component
P0086_00	NUMERIC(6,3)	Wind speed: v-component

Control information(Life cycle description)

Input data

Input metadata

Data processing

Processed data

Metadata for processed data

Processing functions

Stage 0

Primary (downloaded) Resource 1

Stage 1

Resource 1_1

Stage 2

Resource 1_2
=
Resource 1_1
+
Resource 2
+
Resource _3

Stage 3

Resource 1_3

Resource 1_4

. . .

Resource 1_n

UBD contains a set of atomic functions for information resources data preprocessing (preprocessing functions framework): filtering, derived characteristics calculation, union, accumulation, indexing, etc. By sequentially including these functions in data processing algorithm, we can build the information resource life cycle in UBD.

Russian National Oceanographic Data Sentre (NODC)
All-Russian Research Institute of Hydrometeorological Information - World Data Center (RIHMI-WDC)
6, Korolev St.,Obninsk, Kaluga Region, Russian Federation, 249035
Phone: 7 (48439) 7 46 79
Fax: +7 (48439) 68611

CONTACT US

http://esimo.ru/

Alexandr Kobelev:
kobelev@meteo.ru

Evgeniy Vjazilov
vjaz@meteo.ru