



**St. Petersburg Institute for Informatics and Automation of
RAS (SPIIRAS)**

Human's Digital Space in a Digital City

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SPIIRAS



Plan of report

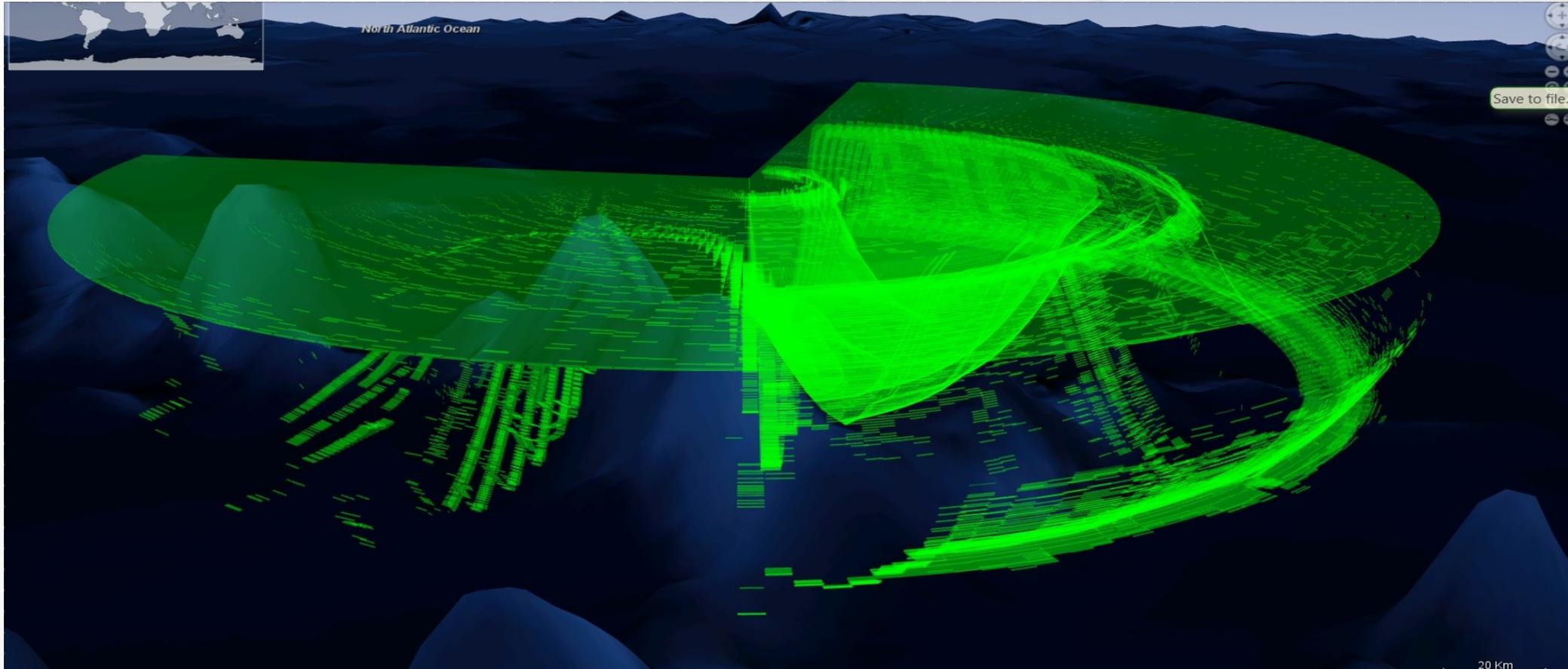
- Introduction
- Digital World
- Digital Space
- Human's Digital Space
- Digital City
- Conclusion



Introduction

Physical World: Nature (land, sea, forest, river, ocean, etc.); Predator and prey; Food and free space; Weather conditions

$$X^{-1} X = \rho(x, z) \frac{d}{dz} \frac{1}{\rho(x, z)} \frac{d}{dz} + k^2(x, z)$$



Introduction



Social World

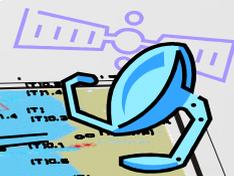
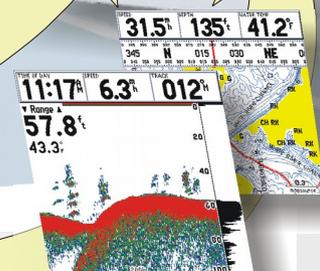
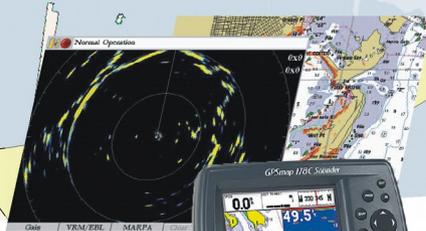
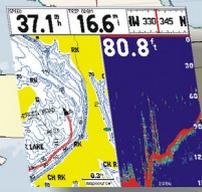




Digital World

Датчики	
Широта	HDOP
N55°42.136'	3.2
Долгота	VDOP
E37°46.561'	4.2
Одometer	Уход часов
4 876 км	-1000 мс

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Digital Space

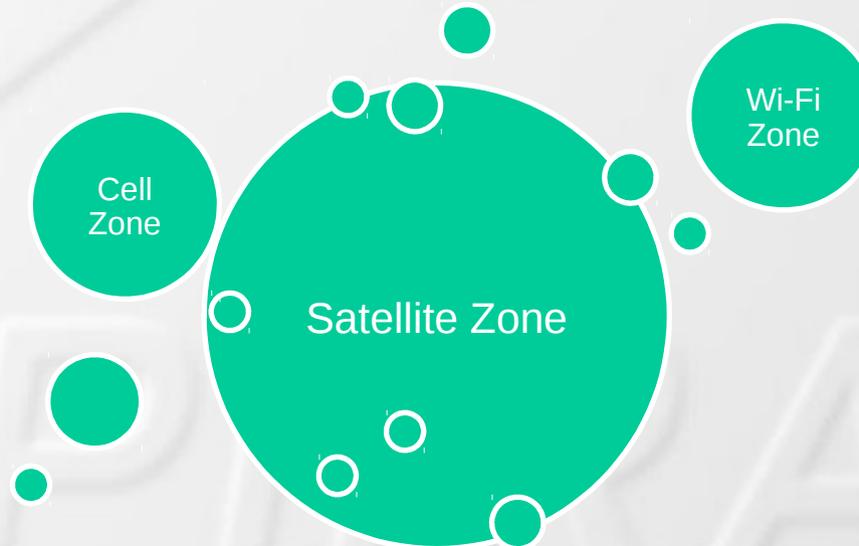
Digital World could not be defined as a system from mathematical or philosophical point of view

Digital Space is a subspace of the DW and should be defined as a system

Wire



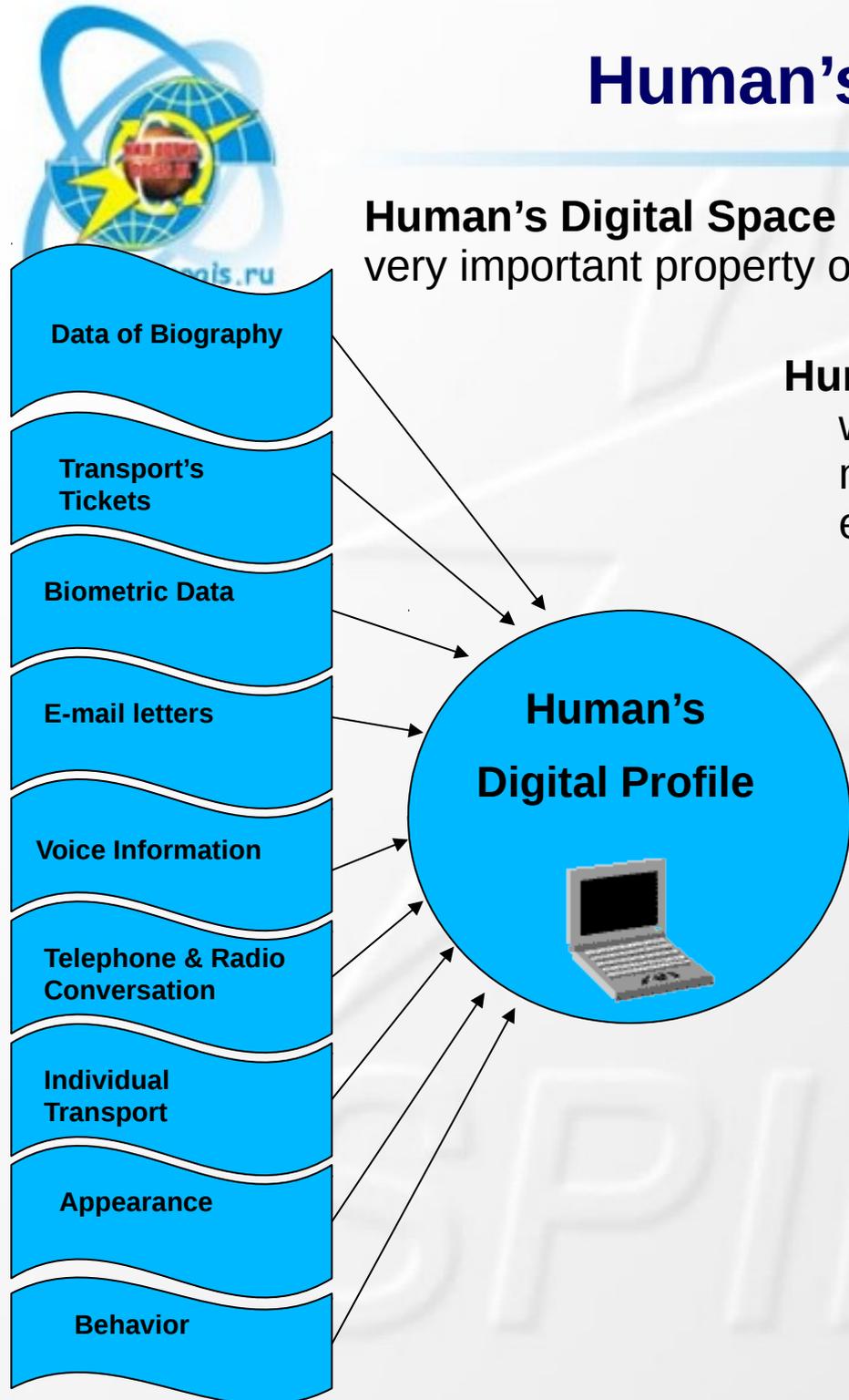
Wireless



Human's Digital Space

Human's Digital Space is a kind of **Digital Space**. In our days HDS is a very important property of individual

Human's Digital Profile – is an abstract object with subset of properties and subset of methods (procedures). This is a static existence.

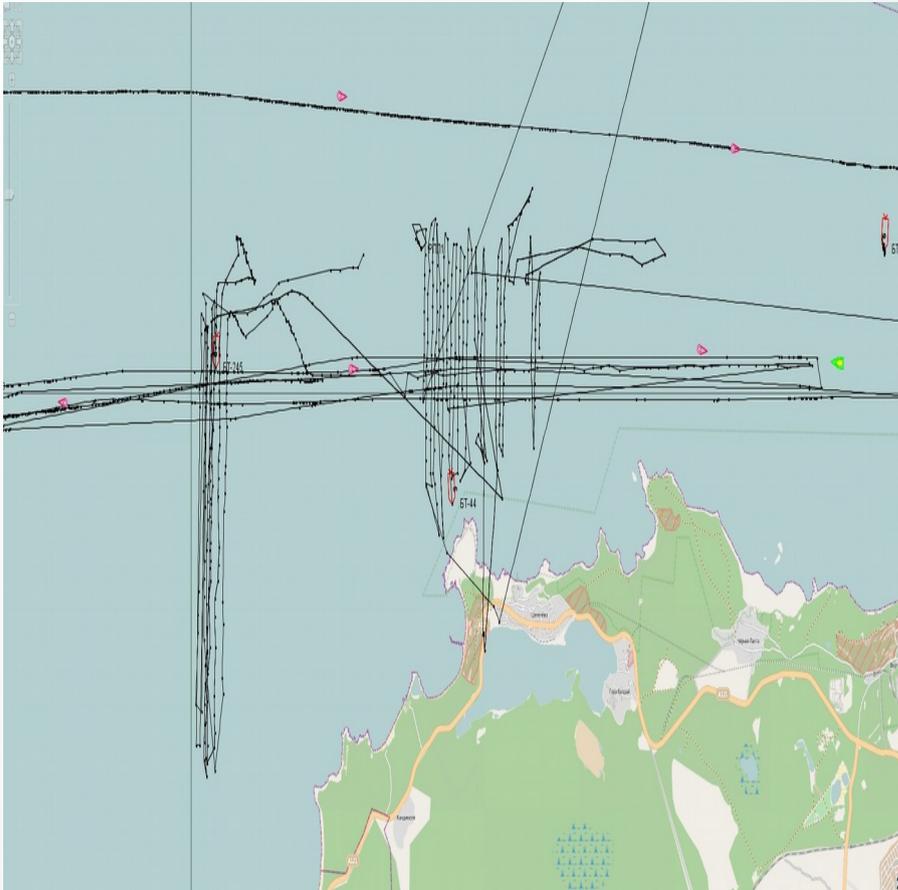


N	Attribute	Possible gradations
1	Nationality	Names of countries
2	Place of birth	Names of countries
...
n	Ethnic type	(1)European type; (2) <u>Far East and Middle Asia</u> type; (3)Arabian and Iranian type; (4) <u>Latin America</u> type.



Human's Digital Space

Human's Digital Track— is an abstract object with subset of properties and subset of methods (procedures). Main properties: coordinates of subject and time. This is a dynamic existence.



CORP 2016, Hamburg, Germany, 22-24 June

Human's Digital Space

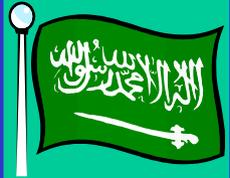
Situation Awareness and Situation Assessment

Type of situation X_n

X_1



X_2



X_3



...

X_n



Situation Z
???



Learning vectors:

X_1

X_2

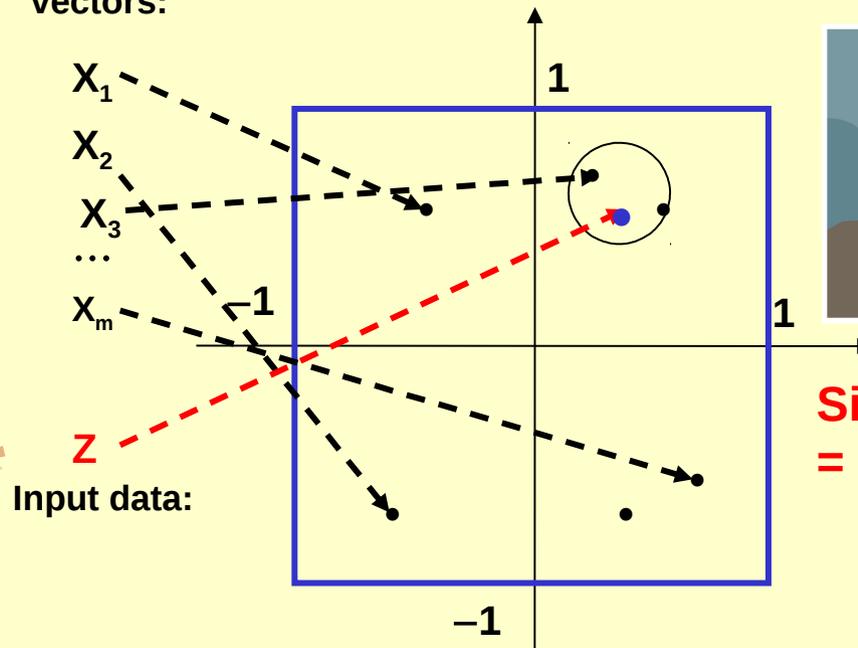
X_3

...

X_m

Input data:

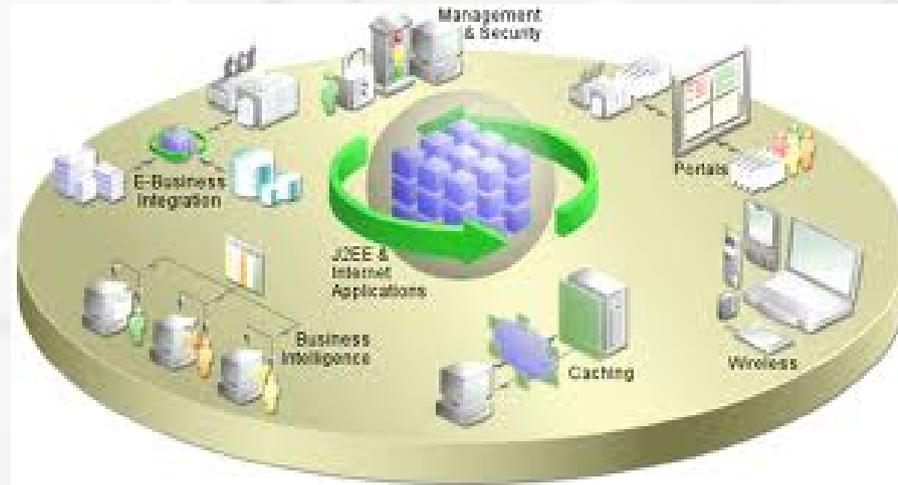
Results: $\text{class}(Z) = \text{class}(X_3)$



Situation Z
= Situation X3



Digital City



Monitoring Centre



Satellite, Cell Network Centre



Discussion

Input DHS

Vulnerability of HDS estimation

Ahmet



...

Izhak



...

Jak

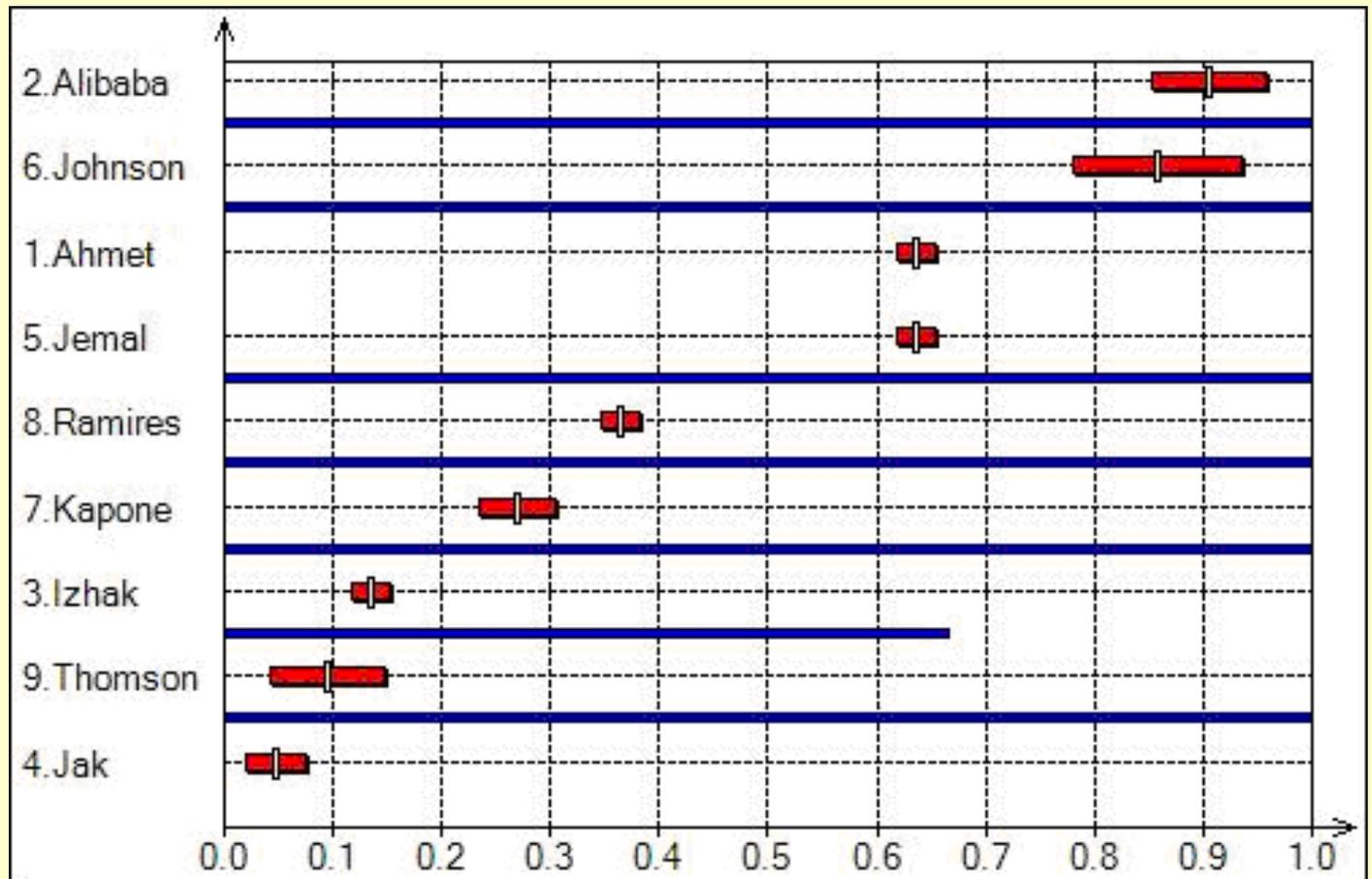


...

Ramires



Thomson





Conclusion

1. Proposed report reflects current stage of our common idea “Humans and Computers”.
2. Introduced abstract conceptions “Digital City” and “Human’s Digital Space” will be investigated in algebraic form and translated as a computer models for PC.
3. Freedom was and is the most important thing for individual during long human history and in our days importance not less that in last years.
4. What is the freedom inside the DW? We hope that it will be a title of our next report.



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