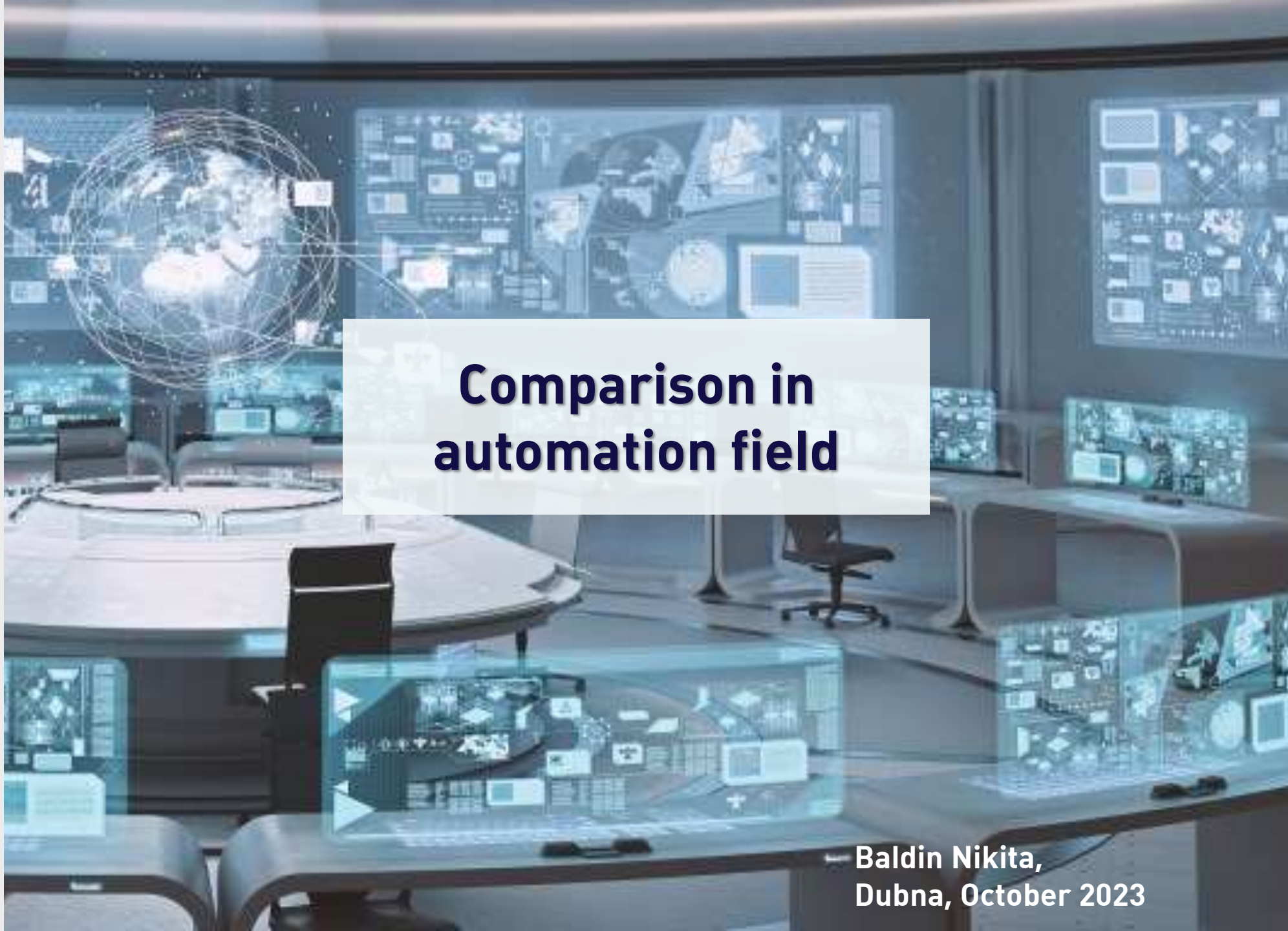
JOINT INSTITUTE
FOR NUCLEAR RESEARCH

NICA MPD

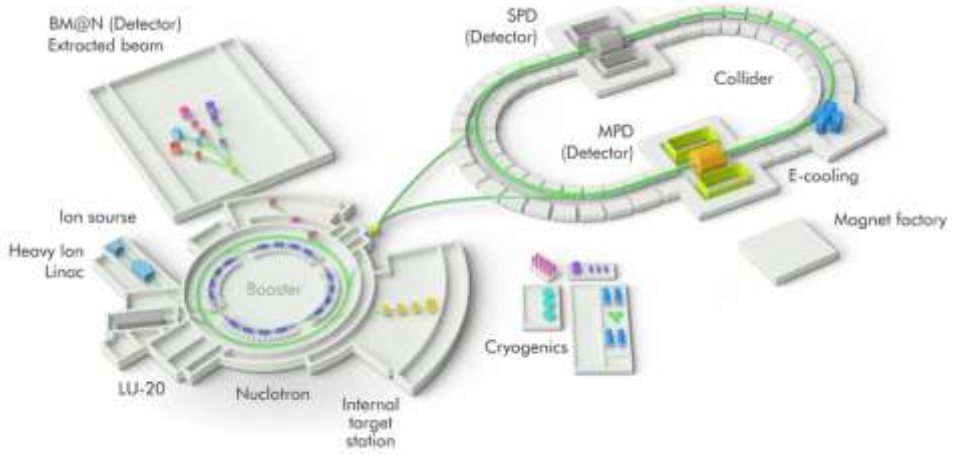


Comparison in automation field

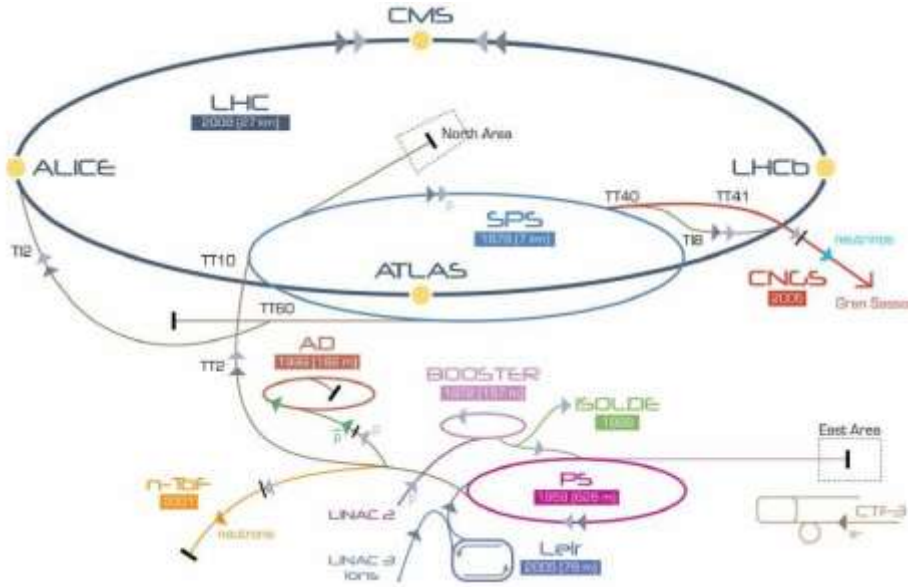
Baldin Nikita,
Dubna, October 2023

1-st group task

A comparative of **work environment**
and **work organization**
at the LHC and the NICA acceleration complexes



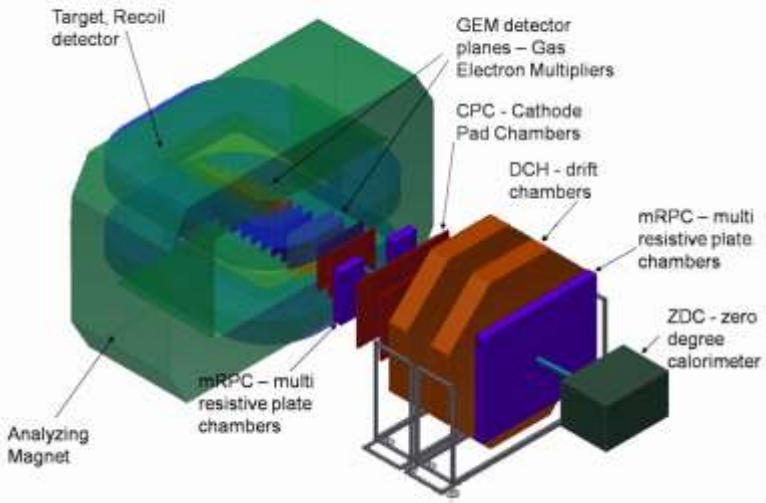
NICA
acceleration complex



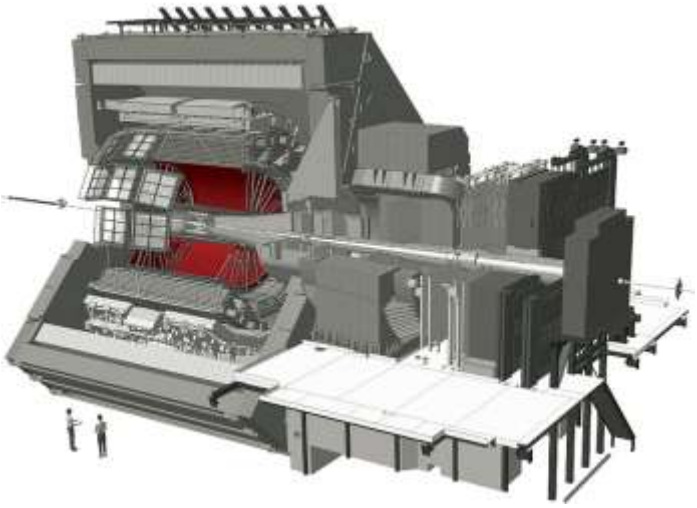
LHC
acceleration complex

2-nd group task

A comparative of **Detector Control Systems (DCS)**
of the BM@N at JINR and the ALICE at CERN experiments



BM@N
Experimental facility



ALICE
Experimental facility

BASIS OF COMPARISON

what would be the
basis of **comparison**?

worldwide experience

research publications

international standards

industry standards

1-st group expected result

№	Future	LHC	NICA
Section 1: **Physical Environment / work environment**			
1	Number of control rooms		
2	floor area		
3	number of working areas		
4	Number of workstations		
5	….		
Section 2: **Organizational Structure**			
8	Number of personnel		
9	Types of Personnel		
10	…		
Work Processes			
Information and Technological Services			
Training Programs and Knowledge Assessment			
Reporting systems			
Technical Support / Communication and Coordination / Change Management Systems / Risk Management			

2-nd group expected result

№	Future	ALICE	BM@N
Section 1: **Deployment Characteristics / Architecture / Topology / Layout**			
1	number of subsystems		
2	number of detectors		
3	Number of internal services		
4	Number of external services		
5	....		
Section 2: **Hardware**			
8	Number of front-end electronic		
9	number of the PLC's		
10	number of crates		
	...		
Section 3: **Software**			
Logical algorithms / automation functions			
HMI GUI			
Organization			

FIRST TASKS

What to do

1. Create a well-structured comparison matrix

2. Find measurable values of comparative parameters

3. Format in the publication's document

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Thank you !!!