

ALIGNMENT IN THE WESTERN SPACE POLICIES UNDER THE INFLUENCE OF INTERNATIONAL FACTORS: CASE OF RUSSIA 2008–2014

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Influencing factors on public policy

- ▣ Internal factors
- ▣ External factors
 - International relations
- ▣ Globalization



- ▣ Interdependence



Space policy as a specific kind of public policy

- ▣ ESA for the EU
- ▣ NASA for the US
- ▣ The Baltic's contribution in ESA:
 - Estonia – Member state (04.02.2015)
 - Latvia – PECS Charter (30.01.2015)
 - Lithuania – ECS Agreement (10.10.2014)



Relations between the West and Russia

- ▣ From Russo – Georgian war (2008)
- ▣ Through the occupation of the Crimea
- ▣ *Swampy* war in Eastern Ukraine
- ▣ The US strict position
- ▣ Less certain position of the EU
 - Position of the Baltic states – the strong support to Ukraine



- ▣ The economic and political sanctions against Russia



Research objectives and methodology

- ▣ Search how great is the dependence of Western space programs on Russia
- ▣ Major directions in US and the EU space policies:
 - Before 2008
 - In span of 2008-2014 (2015)
- ▣ Budget distribution within government space industry
 - Before 2008
 - In span of 2008-2014 (2015)
- ▣ Changes in discourse



Russia's involvement in the Western space systems

- **Launcher Soyuz ST:** for ESA (active contract in 2014, 7 rockets, totally of EUR 0,33 billions)
- **ISS:** participation in construction, exploitation and maintenance, with NASA and ESA (upto EUR 10 billions)
- **Spacecraft Soyuz TMA:** for transport of the NASA and ESA crews to/from ISS (1 seat for EUR 63 mio)
- **Cargo spacecraft Progress:** delivery of cargo to ISS
- **RD-180 / RD-181:** rocket engines for NASA (price of EUR 7,5 mio per article)
- **Raw material plutonium:** for NASA's deep space exploration missions (EUR 1,35 mio per kg)

- **Competition in Geopositioning:**
 - GLONASS vs >> committed to 1/3 of the global market (together with China)
 - GNSS Galileo
 - GPS



Decision making mechanisms in the Western space policies

- ▣ The US
 - The State President
 - Industry Lobby
- ▣ The EU
 - The EU Commission
 - ESA Council of Ministers
- ▣ Other European countries



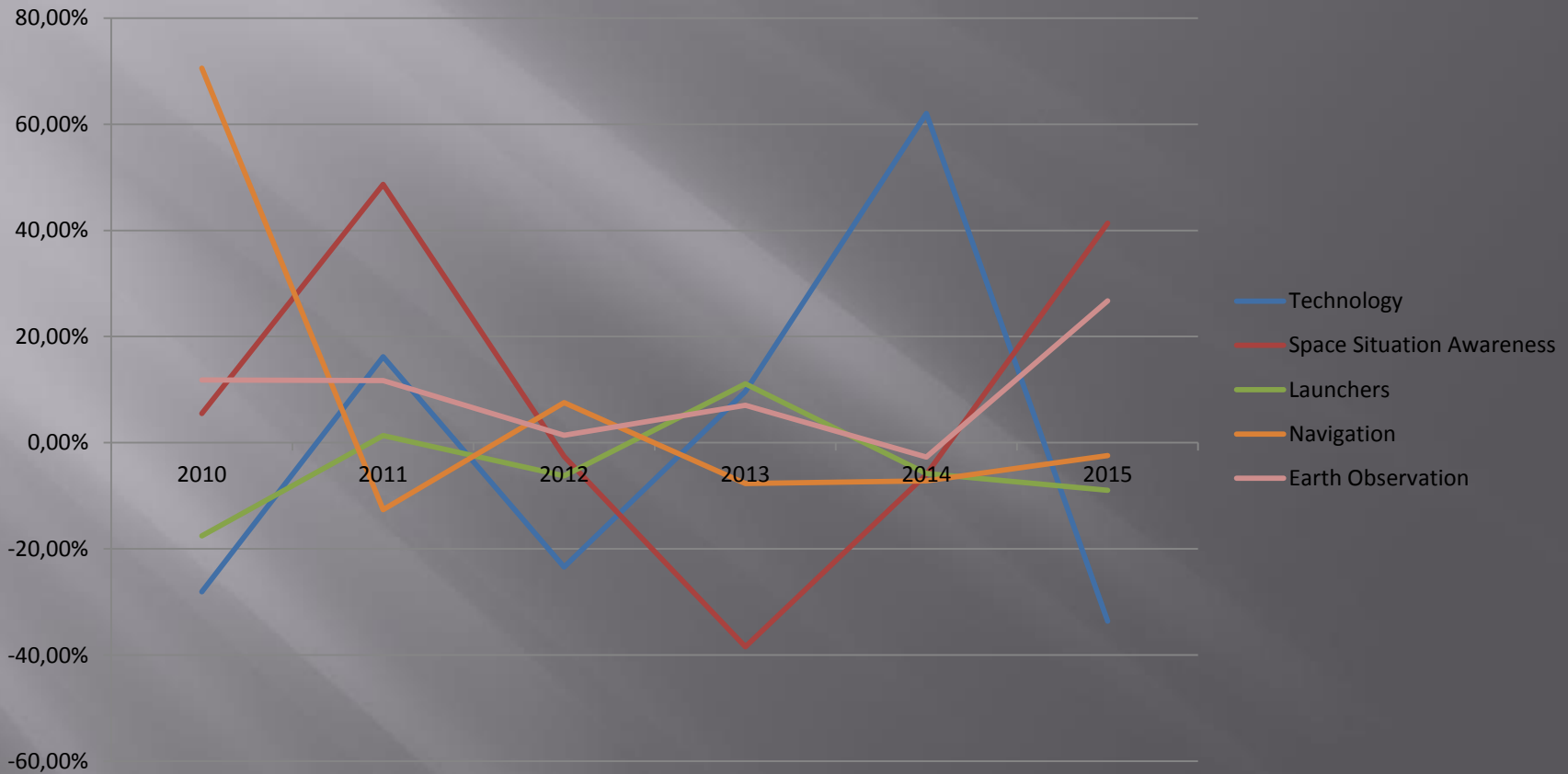
ESA's budget structure

	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>
Technology	3,15%	2,26%	2,63%	2,01%	2,21%	3,58%	2,38%
Space Situation Awareness	0,25%	0,26%	0,39%	0,38%	0,24%	0,22%	0,31%
Launchers	18,35%	15,13%	15,34%	14,38%	15,98%	15,05%	13,71%
(Robotic) Exploration	3,22%	2,72%	3,24%	3,06%	3,24%	3,29%	3,51%
Human Spaceflight (and Manned)	13,38%	10,96%	10,29%	10,28%	9,31%	9,04%	8,38%
Navigation	11,18%	19,07%	16,67%	17,93%	16,55%	15,36%	14,99%
Telecommunications	9,22%	8,70%	8,55%	8,21%	7,34%	7,93%	6,97%
Earth Observation	16,92%	18,92%	21,13%	21,43%	22,94%	22,33%	28,29%
Science	12,10%	10,94%	11,64%	11,93%	11,86%	12,35%	11,46%
Associated to General Budget	5,48%	5,25%	4,50%	4,73%	4,81%	5,14%	4,71%
General Budget / Basic Act	6,67%	5,65%	5,43%	5,51%	5,42%	5,64%	5,24%
ECSA	0,09%	0,14%	0,20%	0,14%	0,11%	0,07%	0,05%
Total (M€)	3591,8	3744,7	3993,8	4020,1	4282,2	4102,0	4433,1



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Significant changes in ESA's budget



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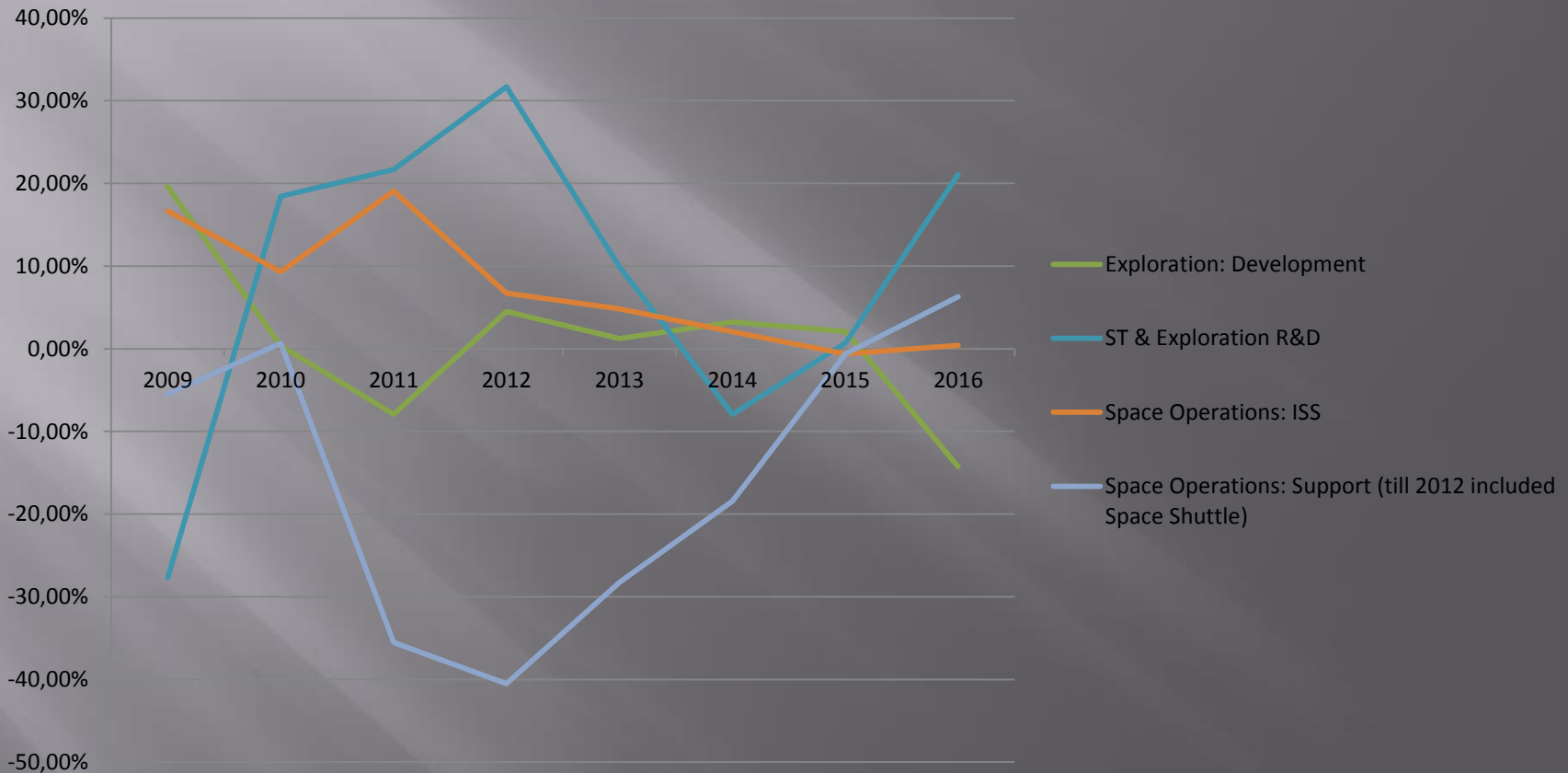
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NASA's budget structure

	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Science	27,20%	24,70%	24,02%	26,67%	28,55%	28,35%	29,17%	29,12%	28,54%
Aeronautics	2,94%	2,74%	2,65%	2,89%	3,20%	3,14%	3,21%	3,61%	3,08%
Exploration: Development	14,63%	17,50%	17,56%	16,16%	16,89%	17,10%	17,65%	18,02%	15,45%
Exploration: Commercial (CCP)	0,75%	1,33%	0,21%	3,29%	2,28%	3,11%	3,94%	4,47%	6,71%
ST & Exploration R&D	3,58%	2,59%	3,07%	3,73%	4,92%	5,40%	4,98%	5,01%	6,07%
Space Operations: ISS	9,69%	11,30%	12,35%	14,71%	15,70%	16,46%	16,80%	16,69%	16,76%
Space Operations: Support	21,50%	20,32%	20,45%	13,19%	7,85%	5,63%	4,59%	4,56%	4,85%
Others	19,72%	19,52%	19,69%	19,36%	20,61%	20,81%	19,66%	18,51%	18,54%
Total (M\$)	17401,8	18232,3	18724,3	18448,0	17770,0	16865,2	17646,5	18010,2	18529,1



Significant changes in NASA's budget



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Changes in the funding of NASA's Commercial Crew Program (CCP)



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Analysis

- ▣ Restructuring of NASA's budget
- ▣ New programmes
 - CCP
 - Blue Origin / Aero Jet engines
- ▣ Alignment in policy of the geopositioning systems
- ▣ A new direction and intensity of Transatlantic cooperation in the space sector



Results and discussion

- ▣ A significant influence on NASA policy
- ▣ Negligible alignment in ESA policy
- ▣ Induced changes in the mutual Western policies

- ▣ Are these alignments caused by changes in relations with Russia?
- ▣ What is the weight of Russia's influence here?
- ▣ How about China's and India's (BRIC countries) international politics effect on?



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Thank you for your attention!

Comments, questions

