

NEWSPACE RESPONSES TO STRATEGIC CHALLENGES IN THE SPACE DOMAIN

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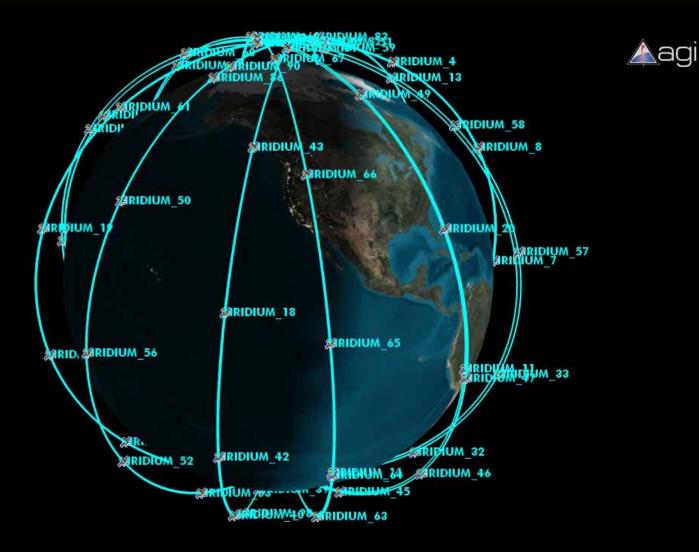


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SL-14 R/BCOSMOS 589 COSMOS 2251 DEB SL-8 DEB SL-8 DEB DELTA I DEB SL-14 R/B COSMOS 2251 DEB AURA TRAILBLAZER COSMOS 1371 FENGYUN TO PLEM COVER PLORE SBoWASS 3-2 (Space Based Wide Area Surveillance System) (NOSS 3-2, USA 173, NOSS C2-1) TAR M057 ALSAT 1 C TORAD CAR DEB SL-8 R/P N/C TORE TORAD AGENA DOEB FENGYUN 1C DEB DELTA 1 DEB FENGYUN 1C D IDIUM 33 DEB SLUT DEB FENGYUN 1C DEB THORAD AGENA D DEB COSMOS 1486 Congested spears of the second states of the second RISAT-2 ERS 2 FENGINUN 1C DEB Contested PEGASUS DEB THOR BURNER 2 R/B L-8 RCARTOSAT.1 THORAD AGENA D DEBFENGYUN 1C DEB THORAD AGENA D DEBFENGYUN 1C DEB THORABLESTAR DEB SL-14 R/B THOR AGENA B DEB THOR AGENA B DEB THOR AGENA B DEB UARS R/Bosmos 2251 DEB SB-WASS 3-3 (Space Based Wide Area Surveillance System) (NOSS 3-3, USA 181, NRO L28) SL-16 DEB³OSMOS 2251 DEB IRIDIUM 33 DEB NFIRE CZ 4DEB AS @ DEBTHORAD AGENA D.@EBFENGYUN 1C DEB FENGYUN 1C DEURIDIU EXPLOR METEOR 2-5 DEB FENGYUN 1C DEB FENGYUN 1C D COSMOS 585 THORAD DELITA 1 DEB COSMOS 1857 DEB COSMOS 209 FENGYUN 1C DEB OPS 7684 M-4S R/BCALIPSO UR 2 R/B COSMOS 2 JR 2 R/B COSMOS 2251 DEB CZ-2C R/B COSMOS 332 COSMOS 1579 COOLANT DELTA 2 R SL-8 R/B GLOBALSTAR M040 COSMOS 1275 DEB SL-DMSP 5D-3 F15 (Defense Meteorological Satellites Program, U SWISSCÜBE EEMETEOR 2=2 COSMOS 2237 **COSMOS 1522** COSMOS 1579 COOLANT COSMOS 791 FENGYUNIC DEE RAX (Radio Aurora Explorer, USA 218) SMOS 842 DSMOS 1933 GEOS 3 WESTFORD NEEDLES COSMOS 2257 THOR DELTA 1 R/B COSMOS 1812 10S£413 SL-8 R/B COOSIC" TRANSIT 5B-1 ANE 44LP+ R/B COSMOS 504 BALSTAR MO33 FORMOSAT 3D TIANHUI 1 COSMOS 1693























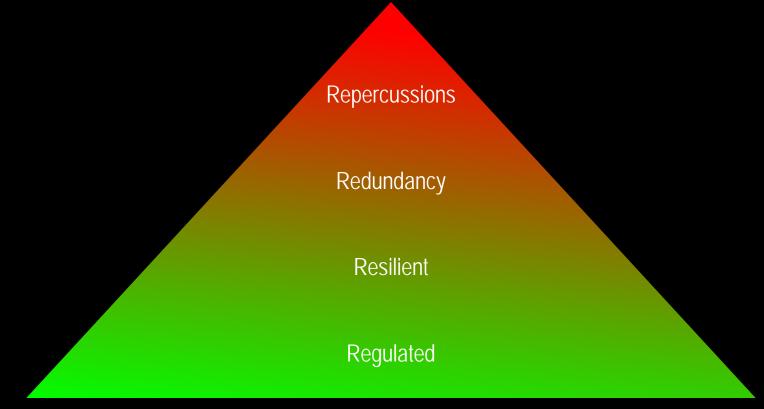








ATTRIBUTES OF A PEACEFUL SPACE DOMAIN



REGULATED

- Clarity
- Awareness
- Transparency
- Attribution





RESILIENT

- Protection
- Recoverability



REDUNDANCY

REPERCUSSIONS

- Attribution
- Verifiability
- Normative framework
 - McGill Manual of International Law Applicable to Military uses of Outer Space
- Legitimacy
- Clarity
- Capability
- Effective
- Minimum recoil



NEWSPACE CONTRIBUTION

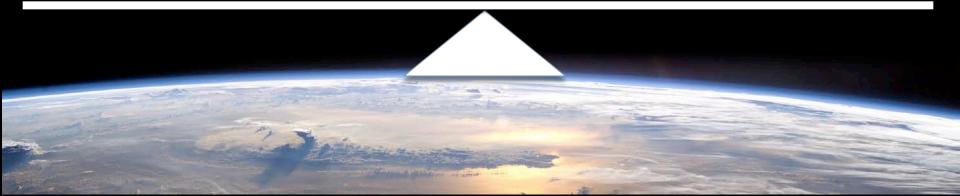
- Innovative
- Entrepreneurial (risk-takers)
- Technical expertise
 - Perception of objectivity vs national representation
- Diversification in capability investment decisions





BALANCE

RepercussionsRegulatedRedundancyResilient



QUESTIONS / COMMENTS

- Written paper
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