



34th Annual **INCOSE**
international symposium

hybrid event

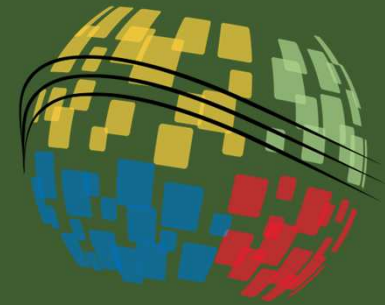
Dublin, Ireland
July 2 - 6, 2024



Promoting Neurodiversity Through MBSE and Other Technical Approaches

2-6 July 2024

Maria Romero
Booz Allen Hamilton
Sr. Solution Lead Architect



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Neurotypical

- People with standard brain processing and functioning
- Neurotypical people often do not know that they are neurotypical
- Seen as "normal"

Neurodivergent

- People whose brain functioning and processing deviates from what is considered "typical"
- Neurodivergent people are usually made aware that their brains function differently
- Seen as "abnormal"

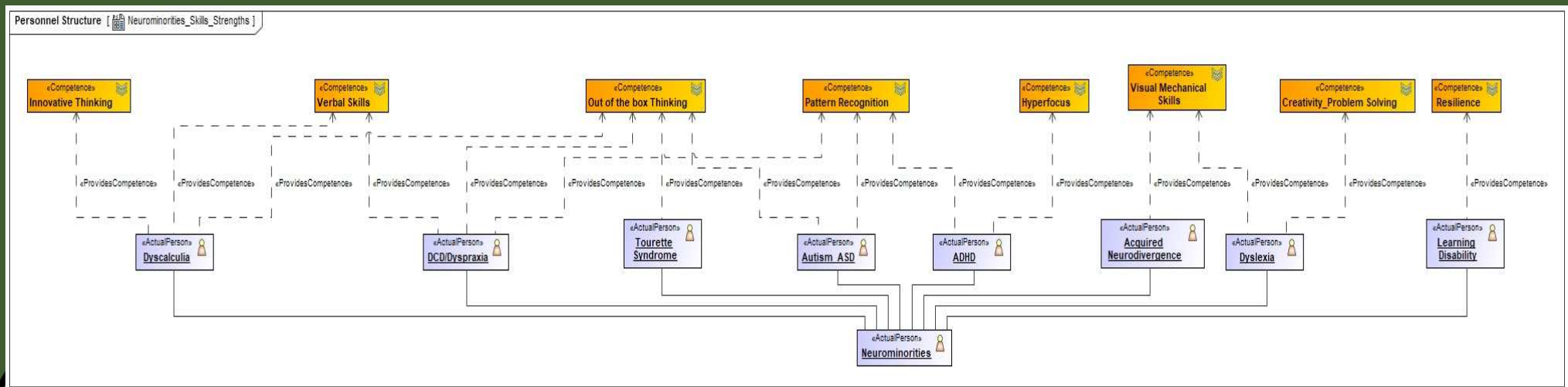
Benefits of Neurodiversity

1. Ability to perceive and create differently
2. Innovation and advances in aerospace, medicine, aviation, technology, and law are made possible from neurodiverse individuals
3. Detailed focus and pattern recognition helps to solve complex problems with identifying changes in imagery and big data
4. Neurodiverse traits are highly valued in the world of technology, science, and engineering

Embracing Differences: Impact of Understanding Neurodiversity

- Allowing a person who is neurodivergent the freedom to accomplish tasks in their own way
- Educating employees/students on neurodiversity
- Fostering an atmosphere of inclusion and acceptance
- Providing noise-blocking headphones for a person who finds noise overstimulating
- Following inclusive hiring/teaching practices








MBSE UAF Model-Types of Neurodiversity and Associated Skills and Strengths



Types of neurodiversity and their associated strengths and skills crucial to maintain a sustainable workforce

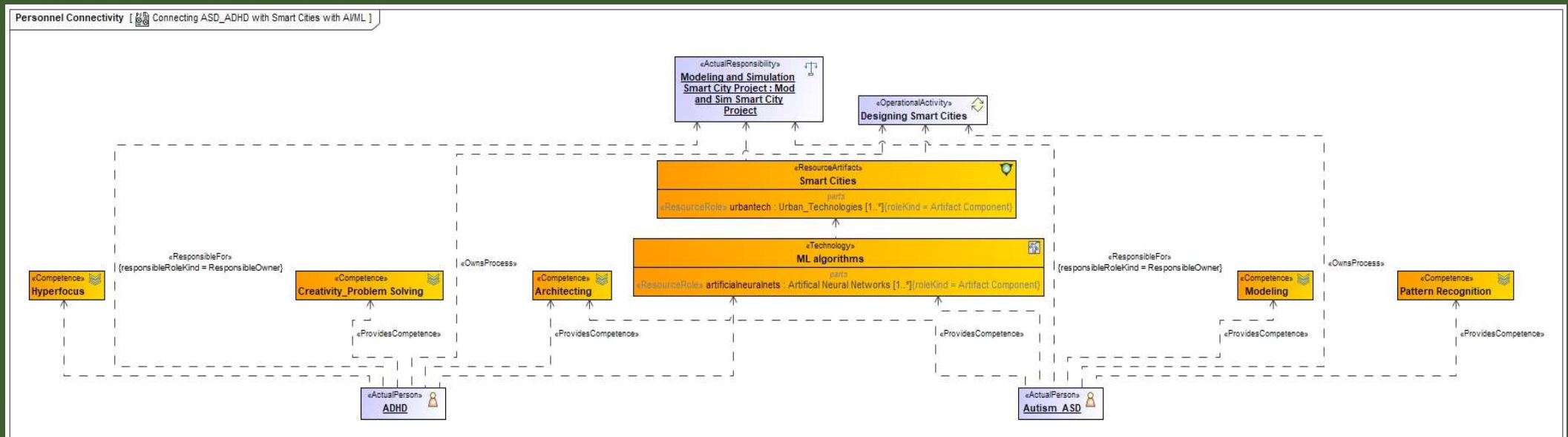
Neurodivergent Hidden Talents

Untapped
Talents

- 01  **Hyperfocus/Extended Concentration**
- 02  **Out of the Box Thinking**
- 03  **Creative Problem Solving**
- 04  **Pattern Recognition**
- 05  **Attention to Detail**
- 06  **Innovation**
- 07  **Specialized Skillsets**

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Neurodivergent Individuals Using AI/ML to Design Smart Cities With Urban Technologies



Sustainability of Space & Other Technical Industries Depends Upon Diversity in the Workplace

- Lack of diversity decreases valuable viewpoints and technical insights unrealized by neurotypical engineers
 - Outcomes/Results:
 - Less innovative solutions
 - Stagnant growth with little to no innovation solutions
 - Lack of resiliency
 - Less diversification strategies
- Finding a way to be more inclusive and diverse helps drive innovation, resiliency, and a more operationally sustainable space economy

Signatories of “Space Workforce 2030”

Space Companies

- Roy Azevedo, president of Raytheon Intelligence & Space
- Tory Bruno, CEO at United Launch Alliance (ULA)
- Steve Isakowitz, CEO at The Aerospace Corporation
- Larry James, Acting Director at NASA Jet Propulsion Laboratory
- Daniel Jablonsky, CEO at Maxar Technologies
- Dave Kaufman, President at Ball Aerospace
- Chris Kemp, CEO at Astra
- Jim Chilton, Senior VP of Space & Launch at Boeing

Space Companies (cont.)

- Tom Wilson, president of space systems at Northrop Grumman
- John Gedmark, CEO at Astranis Space Technologies
- John Serafini, CEO at HawkEye 360
- Robert Lightfoot, executive vice president of Lockheed Martin Space
- Amela Wilson, CEO at Nanoracks
- Peter Platzer, CEO at Spire Global
- Dan Piemont, President at ABL Space Systems
- Will Marshall, CEO at Planet
- Tim Ellis, CEO at Relativity Space
- Michael Colglazier, CEO at Virgin Galactic

Signatories Required to Achieve the Following:

- **Significantly increase** the number of women and employees from underrepresented groups in the technical workforce
- **Significantly increase the number of women and employees** from underrepresented groups who hold senior leadership positions in the technical workforce
- Work with universities to increase the percentages of women and students from underrepresented groups receiving aerospace engineering degrees to levels commensurate with overall engineering programs
- Sponsor K-12 programs that collectively reach over 5,000,000 underrepresented students annually
- Meet twice a year at the working level to exchange best practices on strengthening diversity recruitment, STEM education outreach and representation at leadership levels
- Seek like-minded leaders and organizations to join this effort

Manage with Neurodiversity in Mind



Adopting a person-centric management style

Create an environment where employees can perform at their best

- Neurodivergent people have their own preferences for communication patterns and methods, social interaction, and workspace settings.
- Develop and employ management practices that keep neurodivergent people in mind, which benefits the entire team



Developing a path for career progression

Avoid stereotypes and assumptions about someone's career aspirations



Adopt a strengths-based approach to performance mgmt.

More effective to consider what people do well and try to find ways of using these strengths in other aspects of their work



Focus more on the core skills and competencies

Focus on skillsets and competencies to do the job well

5 Strategies to Infuse Neurodiversity in the Workplace



Ensure the CEO positions themselves as the top champion for neurodivergent efforts

Center neurodiversity in the business strategy

Hold executive leaders accountable for driving neurodivergence outcomes

Mitigate implicit bias at the systemic level

Pivot from diversity training to leadership development coaching

Companies Who Successfully Implemented Neurodiversity Programs

- SAP
 - Benefits: Improved employer reputation, innovation capabilities and employment engagement
 - Monetary Savings: **\$40 million in savings on a single project**
- Hewlett Packard Enterprises
- Deloitte
- Microsoft
- Ernst & Young
- JP Morgan & Chase

Labor shortages in both space and technical fields require employers to be more inclusive or risk the loss of innovation and stagnant growth!

Neurodiversity and the Law

1. Direct discrimination
2. Indirect discrimination
3. Failure to make reasonable adjustments
4. Discrimination arising from disability
5. Harassment
6. Victimization

Lack of diversity and inclusion:

- Results in discrimination & exclusion.
- This hampers collaboration, stifles creativity, and perpetuates an unhealthy and discriminatory culture.



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www.incose.org/symp2024
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