

## **INCOSE Talk on Digital Transformation**

Dr. Tarun Soni

Oct 21, 2021

### **ABSTRACT**

In this talk we will discuss Northrop Grumman's (NGC) approach towards managing complexity and obtaining agility using digital transformation.

At NGC we approach digital transformation holistically across all domains to deliver value for our customers and partners.

A key aspect of our business is making *complex* systems – and digital engineering helps manage this complexity – across the full product life cycle.

In addition to three key components of digital transformation: Lean-Agile, MB(x) and Dev\*Ops, digital threads that pull together all digital artifacts from cradle to grave are a key aspect of our approach.

We use an integrated model framework that, along with traditional MBSE, links requirements, sysML models, analytical models as well as design trades and test results together in a single traceable thread – permitting a virtual approach to the traditional systems engineering V set of processes.

A key part of this virtual approach is the development of digital twins and all the benefits such a digital construct brings to systems engineering.

By the nature of NGC business and products, all of the above digital machinery has to be multi-disciplinary, permitting trades and optimization across many diverse disciplines from materials and mechanical through software and AI solutions.

All of the above aligns well with our customers priorities – and also overlaps with systems and approaches being adopted by the commercial industries.

Embedding this within customers, NGC is using technology to drive greater speed, agility and efficiency.

## **INCOSE North Star Chapter Meeting Agenda, Thursday, October 21st, 2021:**

6:00-6:15 login, networking among members

6:15 - 6:30pm Welcome and Chapter Business by Sean McCoy, 2021 NSC President

6:30 – 7:30 Main topic/presentation

7:30 - 8:00 Q&A

8:00 pm Adjourn

Please join the meeting from your computer, tablet or smartphone.

[https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_ODkxNDA2ZDIYzhkZi00NWY0LWJkNmQtOTExNjJkYjMyN2NI%40thread.v2/0?context=%7b%22Tid%22%3a%22a6f9983b-ca77-4f20-9633-ca9c5a847041%22%2c%22Oid%22%3a%22ca00c1ca-a351-4dd8-91ed-aaefb0c6452d%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_ODkxNDA2ZDIYzhkZi00NWY0LWJkNmQtOTExNjJkYjMyN2NI%40thread.v2/0?context=%7b%22Tid%22%3a%22a6f9983b-ca77-4f20-9633-ca9c5a847041%22%2c%22Oid%22%3a%22ca00c1ca-a351-4dd8-91ed-aaefb0c6452d%22%7d)

Or call in (audio only)

+1 612-361-5538,,793805969# United States, Minneapolis  
Phone Conference ID: 793 805 969#

[Find a local number](#)

### **Biography**



Dr. Tarun Soni  
NG Fellow and Chief Engineer  
Communications Business Unit  
Airborne Sensors and Networks Division  
Northrop Grumman Mission Systems

Tarun Soni, Ph.D., is a Fellow at Northrop Grumman Corporation. He currently serves as the Chief Engineer for the Communications Business Unit at Northrop Grumman Corporation. He is also involved in a number of corporate wide initiatives developing strategy in communications and networking. He provides leadership for technical solutions across a number of domains ranging from tactical platform solutions, nuclear command and control and battlefield gateways. Previously, he has led a number of business groups, pursuits and initiatives across the corporation, primarily in avionics

and networking focusing on software defined radio and network solutions for next generation platforms.

Prior to joining Northrop Grumman, he worked at Argon ST (sold to Boeing), General Dynamics Advanced Information Systems, NASA and startups. In addition he is affiliated with the Technological Leadership Institute at the University of Minnesota. Within the Management of Technology program at the University of Minnesota he teaches leadership, innovation, technology strategy and new market discovery. His experience base also includes teaching in the Department of Computer Science at the University of California, San Diego.

Soni is the author of more than 30 publications. He has a doctorate degree from the University of California, San Diego, and an MBA from the University of California, Los Angeles. His current research interests stray towards understanding complex systems.