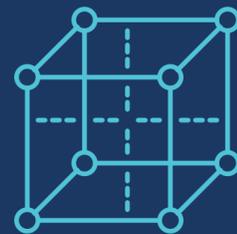
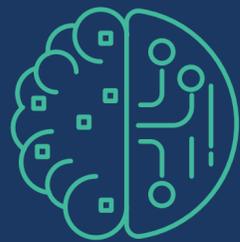


AEG THEMES SHAPING THE FUTURE



WHAT 31 LEADERS ACROSS INDUSTRIES SEE COMING IN 2026

KNOWLEDGE PROPELS INNOVATION



On Jan. 1, 2026, Woolpert kicked off a campaign to share insights from key leaders across the architecture, engineering, and geospatial industry. The premise was built on the success of an overarching geospatial trends article that Woolpert Chief Scientist Qassim Abdullah had produced for years prior to 2023. To help launch this campaign, Qassim brought back that annual look ahead on New Year's Day, which this year was titled "Mapping the Future: Critical Geospatial Trends for 2026."

Every day between Jan. 2 and Jan. 29, Woolpert leaders from across five continents outlined what to watch for this year specific to salient AEG industry topics. From advanced manufacturing to coastal resilience to geotechnical monitoring to data center design, their educated guesses were shared for clients, colleagues, partners, and others to spark conversation, augment collaboration, and propel innovation to benefit all.

These posts, shared through LinkedIn, not only spoke to each topic but, when taken as a whole, created an overarching narrative for the year ahead. In this short report, we outline some of the common themes and more insightful quotes, highlighting the natural confluence of knowledge and cumulative impact that is delivered through global and integrated AEG expertise.

"Industry trends show that digital twins, BIM, GIS planning, and AI-driven asset management are becoming standards in facility surveys and infrastructure modernization. Technologies like advanced mapping, lidar, and UAS-based surveys enable faster design and integrated planning for complex global projects."

AARON JUSTICE
Program Director, Woolpert Europe



31
EXPERTS

5
CONTINENTS

28
TOPICS



INDUSTRY THEMES TO WATCH

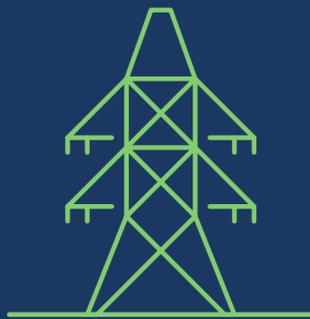
1 ARTIFICIAL INTELLIGENCE



2 DIGITALIZATION & DIGITAL TWINS



3 POWER & ENERGY



4 MONITORING & SENSORS

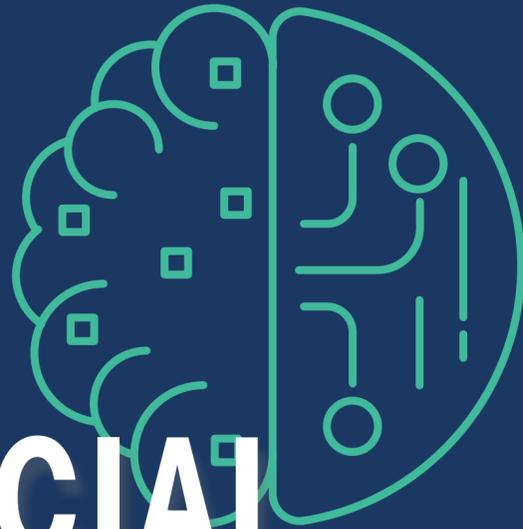


5 DATA CENTERS





1



ARTIFICIAL INTELLIGENCE

Perhaps unsurprisingly, AI was the most frequently mentioned topic among our group of industry experts. Across government and transportation, aviation and mining, work culture and healthcare, over half of our leaders polled (58%) believe their respective markets will be affected by AI in 2026.

The continued proliferation of AI is expected to create a cascading effect, directly influencing many of the other trends our leaders highlighted — particularly in power and energy and data centers.

“The AI boom has created demand across industries. AI requires huge computing power, which depends on electronics built with rare minerals. This, in turn, creates demand for data centers. These processing centers require significant energy to support computing power and cooling systems.”

CHRIS TANNER

Market Director, Africa



“GeoAI technologies are becoming essential for data characterization, emphasizing the need for government agencies to ensure their geospatial models are auditable and comply with legal and ethical standards. AI agents are emerging as vital digital partners that can proactively gather intelligence, synthesize insights, and provide tailored support for national security.”

TOM TICKNER

Managing Director for Federal Services and National Security

“Large language models (LLMs) are widely accessible and natural for human-AI interaction, while GeoAI remains specialized and technical. In 2026, Agentic GeoAI will enable LLMs to interact with geospatial models, making geospatial data more usable and increasing demand for accurate, up-to-date information.”

AARON MORRIS

Innovation Principal





2



DIGITALIZATION & DIGITAL TWINS

About half of our contributors (48%) included digital twins, and digitalization more broadly, in their industry predictions for 2026. This technology will continue to enhance a wide range of use cases across a variety of complex projects, from mapping, modeling, and surveying to predictive maintenance, feedback loops, and decision-making. Several Woolpert leaders agreed that digital twins will become even more precise, popular, and widely adopted in 2026.

“Digital twins are maturing from static 3D representations into living operational models that reflect real conditions through sensor and survey inputs. In 2026, the emphasis will be on connecting monitoring data to geometry and semantics so that a ‘twin’ can support decision-making and feedback loops.”

MATTHIAS GROPP

Director of Monitoring at Murphy Geospatial, a Woolpert Company



“The next design evolution of airports will be defined by digital and multimodal integration. AI, digital twins, and cybersecurity will no longer be optional but strategic and operational necessities.”

CHRISTINE BODOUVA

Director of Aviation Design

“Digital twin technology is transforming how semiconductor facilities are designed and managed. In 2026, we expect even broader adoption of digital twins to enhance operational efficiency and predictive maintenance in smart factories, while streamlining construction and ultimately reducing downtime and future-proofing operations.”

RAY MURPHY

Global Lead for Semiconductors





3



POWER & ENERGY

According to 45% of our group of experts, power demands couldn't be higher in 2026 thanks to AI, data centers, and the electrification of major industries like aviation and transportation.

Existing power grids are under immense strain, acting as a hindrance to advancement. Industry stakeholders must urgently strengthen and modernize aging energy infrastructure while investing in technologies like digital twins, high-fidelity mapping, and other innovations such as agrivoltaics.

“Hybrid-electric systems are bridging today’s operational and grid constraints, while hydrogen is redefining what’s possible for long-range, high-utilization mobility across aviation and surface transportation. Together, they mark a shift toward mobility as a shared energy ecosystem with planned, financed, and governed as critical infrastructure.”

NAASHOM MARX
Advanced Mobility Program Director



“Water supply and energy demands will increasingly constrain the development of advanced technology facilities (such as data centers and chip fabs), agricultural and industrial clients, and hyper-growth communities. As a result, investments in energy and water infrastructure will be critical to meet demands and alleviate development constraints.”

JIM SCHLAMMAN
Water and Energy Utilities Market Director

“New policies restricting conventional solar installations on otherwise developable land will prompt more municipalities and governments to turn to agrivoltaics and Solargation to improve crop yield, accelerating technology adoption among farmers.”

TIM REBER
Program Director for Hospitality





4



MONITORING & SENSORS

Roughly 39% of our experts expressed that the latest monitoring and sensing capabilities — augmented by a roster of technologies such as AI, digital twins, the Internet of Things, the Global Navigation Satellite System, building information modeling, lidar, and large language models — will empower the rapid collection, processing, categorization, and contextualization of data.

This increase in capture speed and data quality will invariably lead to proactive decision-making, greater resilience and efficiency, and immediate in-field insights across markets.

“Supply chains are becoming ‘aware.’ Sensors now track everything from location to temperature, and when a shipment overheats or encounters a delay, the system doesn’t just send an alert — it automatically reroutes the shipment or selects a closer warehouse to protect the goods.”

RICK BENNETT

Director of Digital Innovations



“Unmanned surface vehicles will move from pilots to production; multi-sensor autonomy becomes routine. Expect more sustained, beyond visual line of sight operations with redundant communication and perception stacks, and tighter integration of multibeam echosounders, side scan, magnetometer, and sub bottom in a single workflow.”

DAVE NEFF

Maritime Market Director

“Lidar technology is increasingly integrated with complementary sensors — including hyperspectral, thermal, multispectral, and RGB imaging — within advanced geospatial platforms. This approach enables the creation of comprehensive, multimodal datasets suitable for sophisticated analysis, providing users with valuable context for more precise classification and interpretation.”

QASSIM ABDULLAH

Chief Scientist





5 DATA CENTERS



Data is integral to 2026's technological advancements, and the growing demand for it will continue to fuel the expansion of data centers. Many of our AEG leaders (32% of those polled) predicted that robust data infrastructure will be essential for future airports, healthcare facilities, and factories.

The rapid growth of the data center industry will also spur innovations across sectors facing shortages of skilled labor. Consequently, this acceleration raises concerns about environmental stewardship, energy and water supply, and declining public sentiment.

“Going forward, the industry must listen, provide expertise, and do everything possible to ensure computing power doesn't come at the cost of grid reliability or environmental quality.”

LOU WRIGHT

Program Sustainability Leader, Mission Critical



“Airports worldwide are facing significant challenges as electrification demands grow concurrently with data center expansion. Electrifying airport ecosystems — along with other power-intensive needs — could nearly double peak power demand by 2030 and increase it up to fivefold by 2050 without major grid upgrades, highlighting urgent planning and investment needs.”

ERIC DILLINGER

Senior Development Director

“The industry faces skilled-labor shortages across all roles. The pace of data center growth will only be possible if fewer workers are able to do more, more efficiently. We are rapidly shifting on-site construction to factories. Our building models are evolving into full life-cycle digital twins, supporting automated O&M and future renovations. Design and contracting must move toward the ‘model’ as the contract.”

NEIL SHEEHAN

Mission Critical Market Director





Here are some of the other insights on what to watch for this year that sparked discussion and engagement.

“There will be increased activity on critical projects related to coastal mapping to support storm-ravaged areas from the 2024 hurricane season. This is due to the recent passage of an FY26 appropriations ‘minibus’ bill that includes funding for NOAA, USGS, and USACE, along with the approval of the NOAA work plan to utilize previously appropriated storm supplemental funds.”

JEFF LOVIN
Government Solutions Market Director

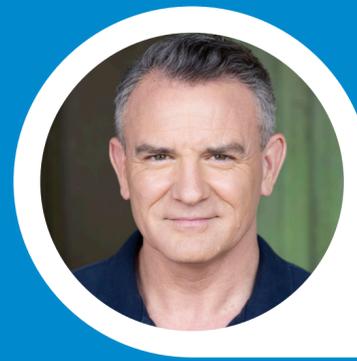


“In 2026, many manufacturers will seek to move production closer to end users to reduce supply chain uncertainties, long lead times, and transportation distances — simultaneously decreasing their carbon footprint. This move will also improve quality control and responsiveness by enabling quicker reactions to customer demands.”

ERIC BEAZLEY
Program Director for Industrial and Advanced Manufacturing

“In 2026, change detection moves from ‘What changed?’ to ‘What changed into what?’ GeoAI won’t just flag loss; it will classify outcomes — vegetation to gravel to structure — enabling automatic compliance tracking and predictive infrastructure monitoring via multi-epoch imagery or 4D lidar (XYZ + time), turning raw change into actionable intelligence.”

IAN DEE
Research, Development, and Innovation Lead at Bluesky, a Woolpert Company



“There will be a shift toward regionalization among water supply providers, driven by capital and operations and maintenance costs, a shortage of qualified managers and operators, and increased competition for limited supplies.”

GUY CARPENTER
Global Water Supply Practice Leader

“Capital is flowing into port development from new sources, accelerating projects at an unprecedented pace. This growth and transformation will bring both challenges and opportunities that ports and shipping companies must address.”

LUIS AJAMIL
Maritime Market Director



“All this data is giving us a better understanding of the natural processes shaping water resources projects. Coupled with new and emerging nature-based infrastructure engineering design guidance, the door is opening to innovative nature-based solutions designed to increase resilience.”

JEFF LILLYCROP
Program Director

“Federal policymakers are pursuing foundational advancements to support transportation technology, including standardized high-definition maps for autonomous vehicles and IoT standards for real-time monitoring of bridges, roads, and rail systems. These aim to improve public safety, infrastructure resilience, predictive maintenance, and efficiency.”

HOWARD WOOD
Transportation Sales Director





To hear from more of our AEG leaders, links to their full posts are below.

CRITICAL GEOSPATIAL TRENDS

Qassim Abdullah

Chief Scientist, Woolpert
Knoxville, Maryland

DECARBONIZATION & DATA CENTER DESIGN

Lou Wright

Program Sustainability Leader, Mission Critical, Woolpert
Chicago, Illinois

STRUCTURAL & GEOTECHNICAL ENGINEERING

Matthias Gropp

Director of Monitoring at Murphy Geospatial, a Woolpert Company
London, England

GLOBAL GEOSPATIAL PROGRAMS

Zaffar Sadiq Mohamed-Ghouse

Director of Geospatial Advisory and Innovation, Woolpert
Melbourne, Australia

WATER SUPPLY

Guy Carpenter

Global Water Supply Practice Leader, Woolpert
Chicago, Illinois

ADVANCED MANUFACTURING

Eric Beazley

Program Director, Industrial and Advanced Manufacturing, Woolpert
Minneapolis, Minnesota

GEOAI

Aaron Morris

Innovation Principal, Woolpert
Pittsburgh, Pennsylvania

TRANSPORTATION REAUTHORIZATION

Howard Wood

Transportation Sales Director, Woolpert
Columbus, Ohio

U.S. MILITARY PLANNING

Aaron Justice

Program Director, Europe, Woolpert
Staffelstein, Germany

COMPANY CULTURE

Laura Woolford

Chief Human Resources Officer, Woolpert
Austin, Texas

MINING & CRITICAL RARE EARTH EXPLORATION

Glenn Morrison

Director of Operations, Asia-Pacific
Geospatial Services, Woolpert
Perth, Australia

Chris Tanner

Market Director, Africa, Woolpert
Cape Town, South Africa

AVIATION TERMINAL DESIGN

Christine Bodouva

Director of Aviation Design, Woolpert
Miami, Florida

Mark Mosko

Buildings Aviation Market Director, Woolpert
New Freedom, Pennsylvania

WATER & ENERGY

Jim Schlaman

Water and Energy Utilities Market Director, Woolpert
Kansas City, Missouri

HYDROGRAPHIC SURVEY

Dave Neff

Geospatial Maritime Market Director, Woolpert
San Rafael, California

AGRIVOLTAICS & SOLARGATION

Tim Reber

Program Director for Hospitality, Woolpert
Chicago, Illinois

U.S. DEFENSE & INTELLIGENCE

Tom Tickner

Managing Director for Federal Services and National Security Market Director, Woolpert
Philadelphia, Pennsylvania

HEALTHCARE DESIGN

Jim Johnson

Global Director of Healthcare, Woolpert
Miami, Florida

ENERGY

Sam Acheson

Energy and Utilities Market Director, Woolpert
Fort Collins, Colorado

LOCATION INTELLIGENCE

Rick Bennett

Director of Digital Innovations, Woolpert
Dayton, Ohio

SEMICONDUCTORS

Ray Murphy

Global Lead for Semiconductors, Woolpert
Dublin, Ireland

COASTAL RESILIENCE

Jeff Lillycrop

Program Director, Woolpert
Gulf Breeze, Florida

AIRPORT ELECTRIFICATION

Eric Risner

Aviation Market Director
Dayton, Ohio

Eric Dillinger

Senior Development Director
Dallas, Texas

COMMERCIAL MARITIME INDUSTRY

Luis Ajamil

Maritime Market Director, Woolpert
Miami, Florida

AERIAL SURVEY IN EUROPE

Ian Dee

Associate Director at Bluesky, a Woolpert Company
Coleshill, England

INDO-PACIFIC REGION

Mark Smits

Geospatial Program Director, Woolpert
Kailua, Hawaii

ADVANCED AIR MOBILITY

Naashom Marx

Advanced Mobility Program Director, Woolpert
Cincinnati, Ohio

GEOSPATIAL LEGISLATION

Jeff Lovin

Government Solutions Market Director, Woolpert
Port Charlotte, Florida

DATA CENTER DESIGN

Neil Sheehan

Mission Critical Market Director, Woolpert
Chicago, Illinois

LIDAR

Qassim Abdullah

Chief Scientist, Woolpert
Knoxville, Maryland

THANK YOU AND CHEERS TO

2026!



WOOLPERT

