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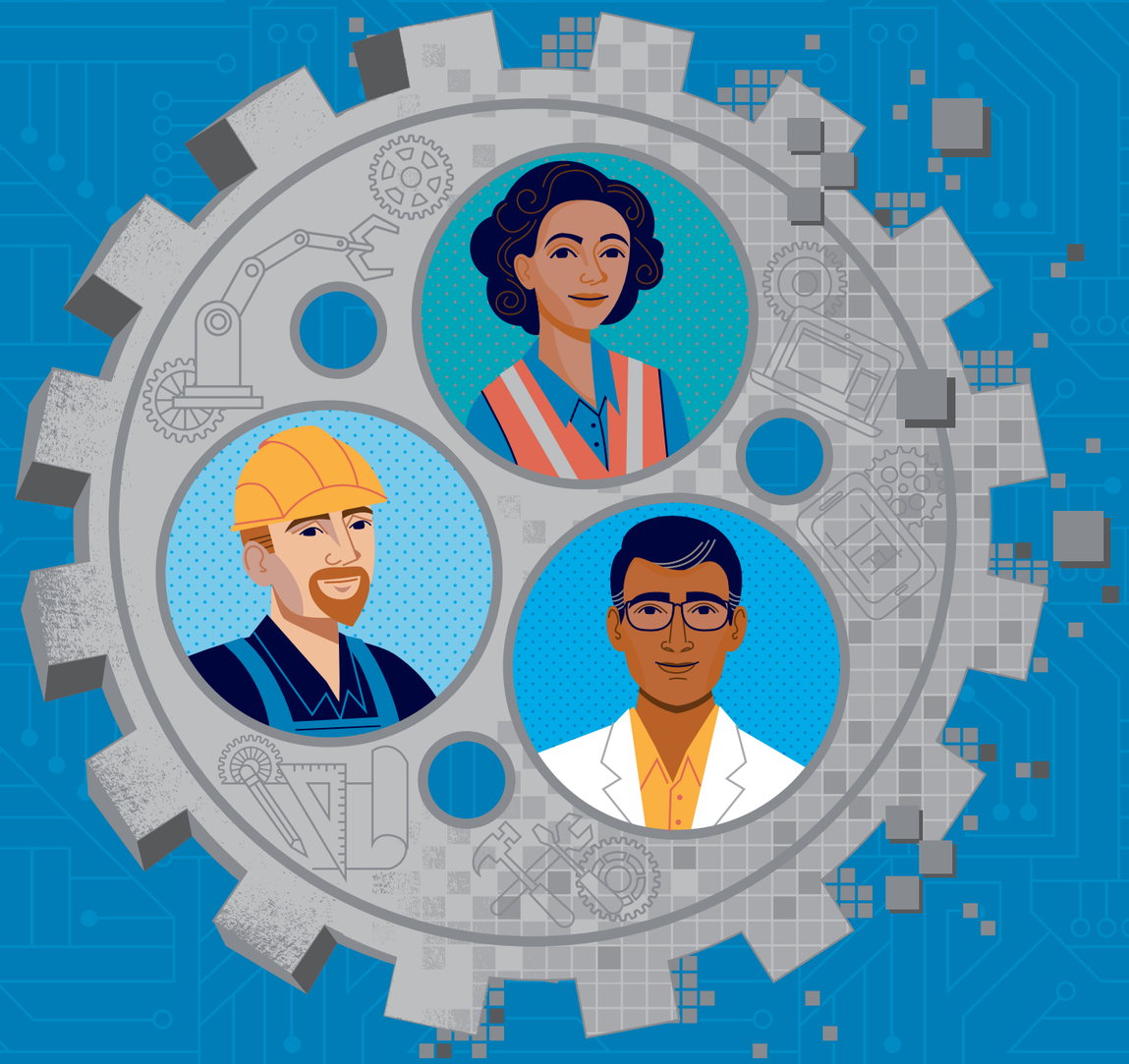
A DELOITTE SERIES ON THE SKILLS GAP AND THE FUTURE OF WORK IN MANUFACTURING



The future of work in manufacturing

What will jobs look like in the digital era?

DRONE DATA COORDINATOR

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Summary

The construction sites in 2025 are different than in 2019—autonomous drones, cranes, robots, and other automated equipment perform repetitive, heavyweight, and hazardous tasks. This has created a new human role, a coordinator to exploit data from fleets of drones. Drone data coordinators (DDCs) have on-site and off-site responsibilities, including coordination with drone service providers and life cycle responsibility for the data the drones capture.

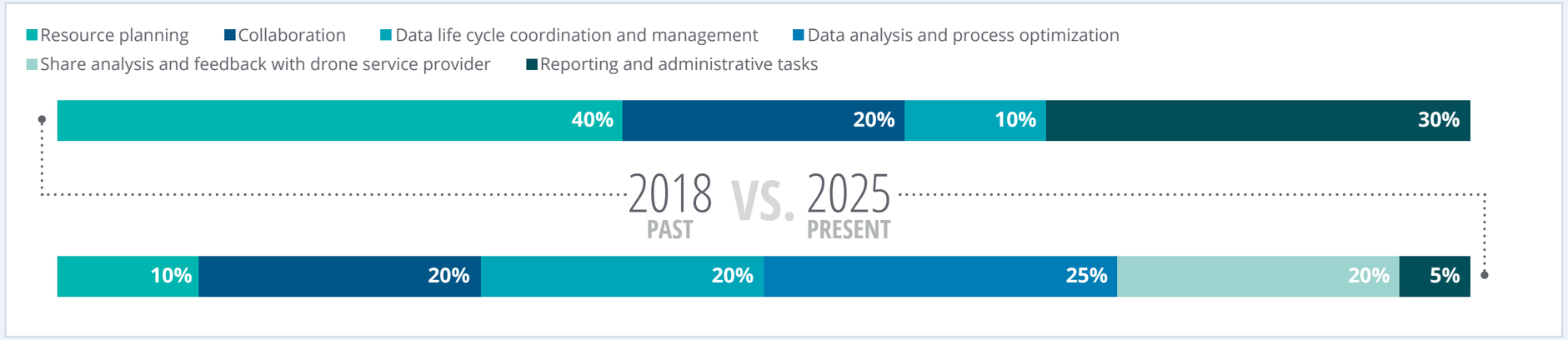
DDC is a new full-time role for many engineering, procurement, and construction (EPC) firms. As data has become the digital thread across the job site, this role has emerged to coordinate the data that leased fleets of autonomous drones can capture for safety, inspection, operations, and risk managers. DDCs work with the contracted drone service provider on a project basis. Since these are tethered autonomous drones, the DDC is tasked with identifying any new information requests and communicating them with the drone service provider, who performs maintenance, programming, and Federal Aviation Administration airspace coordination on behalf of the EPC.

In addition to key on-site responsibilities, DDCs also perform various off-site responsibilities, including flight data analysis, route optimization, resource planning, handling requests for new information from stakeholders, and managing the drone service provider relationship. DDCs can work both on-site or from remote locations around the corner or across the globe. In the case of remote locations, they coordinate data collection through a digital twin of the construction site.

Responsibilities

- Oversee the collection of drone surveillance, safety, inspection, and operation data and conduct analysis on it.
- Develop standard operating procedures (SOPs) and increase the number of drone data collection opportunities at the site.
- Plan for any changes in the daily data capture routines of the drone fleets, moderating the routine as the build progresses, and ensuring turnaround of critical data insights to stakeholders.
- Cultivate relationships with drone service providers, and work in difficult and fast-changing environments.
- Identify new data-capture opportunities to solve for business needs across various stakeholders.

Time spent on activities



ERIC DENSON

DRONE DATA COORDINATOR
True Constructions LLC | *Detroit, Michigan*

Proficient in project, resource, and equipment management; business expansion for drone data collection; client management; cross-team collaboration; agile management; and drone data analysis and communication.

Experience

Drone data coordinator
True Constructions LLC *Oct 2023–present | 1 year 8 months*
Plays a key role in the expansion of drones into the company's life cycle data management model; has executive responsibility for managing and networking with drone service providers to create new efficiency, safety, and risk management opportunities for the EPC firm

Systems integration engineer
Aquila Motor Works Pvt. Ltd. *Jan 2022–Sep 2023 | 1 year 9 months*
Developed and assessed the scope for new technologies and applications, performing feasibility testing; led the company's technological innovation efforts, overseeing a team of robotic process automation developers

Solution architect associate
Aquila Motor Works Pvt. Ltd. *Sep 2019–Dec 2021 | 2 years 3 months*
Served as the primary technical escalation point, supporting teams with specialist knowledge, code validation, and data flows using the company's visual and operations platform; initiated new projects and requests to meet customers' expectations; implemented cloud solution with continuous delivery models and auto-scaling infrastructure

Education

Viterbi School for Higher Engineering, University of Southern California
Master of science, Systems architecting and engineering
2019–2020

Viterbi School of Engineering, University of Southern California
Bachelor of science, Mechanical engineering
2015–2018

Other certifications

- **EdX**
  Certificate in human machine interface designing
- **EdX**
  Certificate in software architecture
- **OpenLearnOrg**
  Certificate in project management

Skills and endorsements

- Data life cycle management · 430
  Endorsed by **Steve** and **Jennifer**, who are highly skilled at this
- Resources optimization · 412
  Endorsed by **Kelvin** and **Michael**, who are highly skilled at this
- Analytics · 350
  Endorsed by **Steve** and **Robert**, who are highly skilled at this
- Communication · 324
  Endorsed by **Steffi** and **Jennet**, who are highly skilled at this
- Networking · 246
  Endorsed by **Parker**, who is highly skilled at this
- Automation · 195
  Endorsed by **Benny**, who is highly skilled at this
- Client management · 186
  Endorsed by **Kelvin** and **Steve**, who are highly skilled at this
- Collaboration · 85
  Endorsed by **Parker** and **Michael**, who are highly skilled at this
- Change management · 79
  Endorsed by **Shanta**, who is highly skilled at this
- Project management · 68
  Endorsed by **Rahul** and **Raj**, who are highly skilled at this

TOOLBOX

THE TOOLBOX SUPPORTS THE WORKER AS A WHOLE—IN ACHIEVING EXTERNAL OUTCOMES SUCH AS PRODUCTIVITY AS WELL AS INTERNALLY FOCUSED ONES SUCH AS DECISION-MAKING AND LEARNING.

Productivity

Venus
This AI-powered, voice-enabled digital assistant provides a conversational interface for all productivity-related tasks, from scheduling to finding answers to questions and checking the status of products and projects.

VirtuMeet
This AR smart-glass conference room with AI capabilities allows global partners to meet and collaborate, overcoming the barriers of physical separation. With built-in AI, AR screens can present short bios or other relevant information about attendees as the user pans across their faces.

InstaCap
It captures data automatically using digital technologies such as radio frequency identification (RFID) and speech recognition. It helps collect information from machines, images, or even sounds without manual data entry.

Share Smart
An enterprise social and mobile technology tool that helps in sharing digital 3D designs and images as digital files to improve the collaboration necessary to build a new product, supply network configuration, or assembly line right the first time.

Gen4-Conservatory
These are smart meeting rooms for teams that are co-located but are from different functions. Smart-glass boards plugged with AI-enabled devices can pull data from multiple sources and conduct basic data transformation. Voice-activated, these devices can operate with basic sound commands. These capabilities help the data team in ideation and offering formulation.

VizWizard
A visualization tool that can create graphs and infographics with minimal text inputs from the user. It is also capable of creating topline results based on information available in charts.

Decision-making

Smart Dash
A visual display that presents data, live information, and analysis from multiple sources to facilitate informed decision-making.

RealConnect
This application enables an engineer to seamlessly interact with suppliers, partners, customers, and the broader ecosystem.

Learning

SkillsPro
This smart learning assistant helps digital twin engineers refresh existing skills as well as learn new and emerging skills. Its conversation mode shares tips and tricks about the tools/techniques that an engineer has learned recently. When synced with an engineer's project planner, it shares a list of skills to be learned for implementation in upcoming projects.

SmartLab
It facilitates classroom learning using virtual reality headsets and simulation. It tests trainees on a defined skill framework and measures subjective aspects based on their response style. Each trainee receives customized learning objectives.

A DAY IN THE LIFE

04:30 AM

After an early breakfast, Eric—a DDC—views a VizWizard-standardized project status report summarizing weekly project status for two sites with ongoing construction work. Eric reviews the reports and autonomous drone maps to ensure the right data is being collected to monitor, track progress, and inspect for safety issues at each site. Appropriate instructions are provided to the drone service provider through Share Smart. Given the successes of the drone use at both project sites, Eric asks Venus to provide a copy of the report to attendees of the cross-functional meeting at which he will present today.

05:00 AM

Eric starts his day early to beat the summer heat and reaches construction site A. Venus checks him into the office.

05:30 AM

Using VirtuMeet, Eric leads a meeting with True Constructions LLC security and analytics teams (based out of corporate offices) to discuss the use of DEXT drones at a new project (project site C), with construction scheduled to start in one month. Before construction begins, Eric discusses the planned data capture of the drones and the security and analytics teams provide feedback on DEXT drones and whether they meet True Constructions' standards in protecting intellectual property (construction methods, materials to be used, site images) at the highly publicized site C. Eric schedules a RealConnect meeting with DEXT to meet the drone fleet manager and discuss SOPs at site C.

07:00 AM

Venus reminds Eric of the scheduled live meeting with the drone service provider at site A. During the meeting, the drone service provider explains how InstaCap is utilized in the drone technology to overlay drone maps with site plans such as utility, wastewater, and equipment clearances. To demonstrate, the drone service provider navigates the drone to capture images and perform inspections for potential safety or maintenance concerns. Using SkillsPro, Eric keeps notes from the discussion with the drone service provider.

08:00 AM

Using the Gen4-Conservatory at site A, Eric attends a cross-functional meeting with site A project managers. Using data from the VizWizard report reviewed earlier, Eric presents an update related to ongoing regulatory developments for drones and unmanned aircraft, identifying new opportunities to utilize this technology for True Constructions' advantage using drone aerial imagery. Smart Dash allows project managers to see live data and expected efficiencies of adding additional drones to the existing fleet at site A.

10:00 AM

Eric breaks for brunch followed by a quick game of table tennis with his colleagues.

11:00 AM

Eric receives an urgent call from the project manager at site B in Zurich, Switzerland, and learns about mechanical issues with one of the on-site drones. Via RealConnect, Eric sends a message to the drone service provider to arrange a replacement drone within the standard turnaround time. Eric reminds the project manager at site B about the SmartLab course he is facilitating on-site next week; the course is designed to help the workforce work more collaboratively with drones.

12:00 PM

Eric meets with one of site A's drone service providers to discuss the incorporation of 3D models from drone imagery into existing planning, design, and management workflows, along with aerial insights to help catch problems early and perform safety inspections. In his role as the DDC, efficiency of drones is expected, to keep the project within budget.

01:00 PM

Before wrapping up for the day, Eric reviews the VizWizard report showing daily project status, site surveillance images, and safety and security updates by project site, to prepare for a site C project status meeting the next day. As Eric leaves the office to drive across town to watch his son's baseball game, Venus makes dinner reservations for Eric and family after the game.

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