

set the pace with software-defined vehicles.

you've got the vision, randstad digital has
the expertise and solutions.



the software-defined vehicle (SDV) market is full speed ahead.

SDVs are the future of the automotive industry. This new era of automobiles will rely primarily on software for managing operations and adding new features and functions.

Analysts report that there will be approximately **367 million SDVs** on the road worldwide by 2027. And the global SDV market, size is expected to grow by almost 20 percent annually to reach **\$211 billion by 2032**

This amazing growth is due to the fact that software is the driving force behind popular vehicle features like:



advanced driver-assistance systems (ADAS)

adaptive cruise control, lane assist, and automatic emergency braking are becoming standard features on new cars.



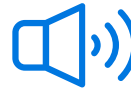
connected services

the ability to connect to the internet enables cars to provide live traffic updates, remote diagnostics, and even remote control via smartphone apps.



personalization

drivers can customize settings for different drivers, such as preferred seat and mirror positions.



infotainment systems

customers prefer smartphone-like touchscreen displays that control everything from navigation to climate control.



enhanced safety features

real-time monitoring and predictive analytics are the foundation of autonomous driving, creating safer experiences for pedestrians and drivers.



over-the-air (OTA) updates

with software controlling most of the functionality, vehicles can evolve over time through OTA software updates and big fixes so customers can always have the latest and greatest driving experience.

As major automotive brands such as Porsche, Ford, GM, and Mercedes-Benz herald SDVs as the next frontier, there is a clear opportunity for other auto manufacturers, Tier 1 suppliers, and original equipment manufacturers (OEMs) to be a part of this profitable and exciting area.

rethinking vehicle development.

Creating a "smartphone on wheels" requires a complete rethinking of traditional vehicle development processes. While SDVs are a major focus for the automotive industry, there are significant hurdles to address, like developing robust regulations and legal frameworks for SDV operation and ensuring the safety and reliability of SDVs in complex driving scenarios. In addition, as SDVs transform the automotive landscape, traditional processes must adapt to support the design, development, and maintenance of these advanced vehicles.

agile software development

creating software that's innovative as well as robust, reliable, and secure

container technology

developing software packages that house various libraries, tools, and settings to simplify OTA updates, enhance scalability, and manage configurations

application programming interface (API) management

streamlining software dependencies

cybersecurity

protecting customer data and the integrity of the software, and guarding against hacking

artificial intelligence (AI)

developing and implementing AI solutions in SDVs to make the driving experience smarter and more adaptive.

And as the automotive industry becomes more invested in technology, companies will need to deal with many of the same challenges software companies currently face. Chief among these are gaps in expertise that can throttle progress.

The rise of SDVs presents a significant transformation challenge for automakers, Tier 1 suppliers, and OEMs. This includes the need for expertise and solutions in a variety of new areas, such as:

system integration

integrating all the various systems and components in an SDV.

testing

verifying and validating the functionality, performance, reliability, and security of software and its interactions with the vehicle and ecosystem.

digital twin

creating a virtual environment that allows developers to design, test, and validate various software components.

shortage of expertise a “significant challenge” for SDV automakers.

86%

of CIOs face increasing competition for qualified tech expertise.

73%

of CEOs are worried about tech talent attrition.

1.2 million

tech jobs will go unfilled by 2026

partnering with an experienced SDV solutions provider is a flexible way to quickly access specialized expertise and stay competitive in the fast-paced SDV marketplace.



top SDV expertise required.

With the right partner, automotive industry players can stay competitive as the industry accelerates. Look for a partner that can help you source expertise and solutions in the following areas.



- sensor fusion: combining data from cameras, radar, and Light Detection and Ranging (LiDAR) to create a comprehensive picture of the vehicle's surroundings
- algorithm development and implementation: developing and implementing algorithms for object detection, classification, path planning, and decision-making
- safety analysis and validation: following automotive safety standards (ISO 26262) to ensure the safe operation of ADAS systems



- threat modeling and vulnerability assessment: identifying potential cybersecurity threats and vulnerabilities in SDVs to prevent cyberattacks
- secure software development lifecycle (SDLC): implementing secure coding practices and secure SDLC processes throughout the development lifecycle to mitigate cybersecurity risks
- intrusion detection and prevention systems (IDS/IPS): protecting in-vehicle networks from unauthorized access and malicious activity
- secure communication protocols: utilizing protocols like vehicle-to-everything (V2X) to safeguard data transmission between vehicles and surrounding infrastructure



- software development and integration: providing user interfaces, media applications, navigation systems, and connectivity features to create a seamless and engaging in-vehicle experience
- security features: implementing security measures to protect user data and prevent unauthorized access to in-vehicle entertainment systems
- customization and personalization: providing options for users to personalize their infotainment experience according to their preferences



- telematics and remote diagnostics: enabling real-time monitoring of vehicle performance, preventive maintenance, and early detection of potential issues
- cloud-based data management and analytics: facilitating efficient data storage, management, and analysis to generate valuable insights for vehicle development and operation
- OTA software updates: enabling remote delivery of new features, bug fixes, and security patches to keep SDVs up to date and optimized
- secure and reliable in-vehicle networks: establishing high-speed, secure in-vehicle networks like Ethernet and 5G to support the ever-increasing data demands of SDVs



vehicle dynamics and control

- powertrain control: managing the engine, transmission, and other components for optimal efficiency and performance
- chassis control: developing software for functions like antilock braking systems (ABS) and electronic stability control (ESC) to ensure vehicle stability
- steering control: implementing software for electronically assisted steering systems



AI and machine learning (ML)

- autonomous driving: developing the AI and ML algorithms needed for self-driving cars
- predictive maintenance: using AI to predict maintenance issues before they occur
- personalized driving experiences: leveraging AI to personalize driving settings and recommendations based on individual driver preferences



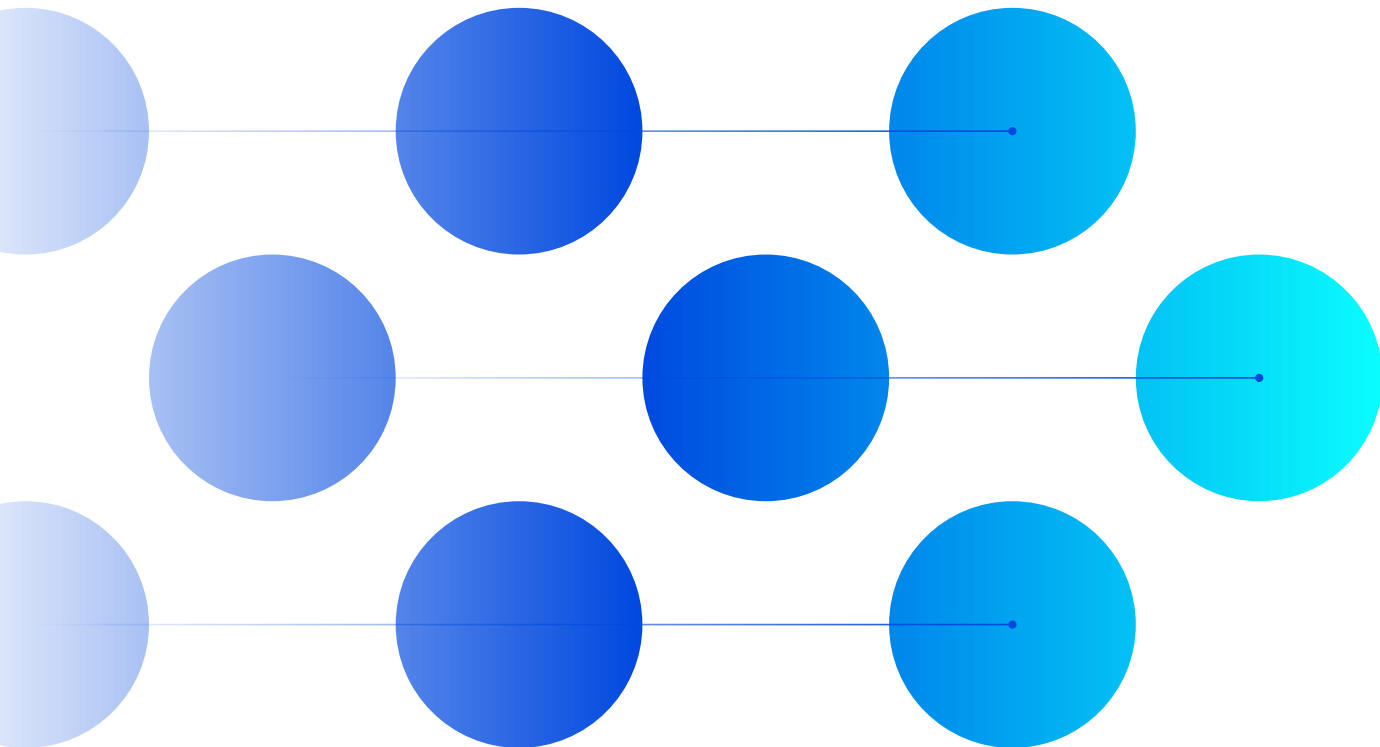
human-machine interface (HMI)

- user interface design: creating intuitive and user-friendly interfaces for drivers to control various aspects of the vehicle
- voice recognition and natural language processing: enabling voice commands for controlling features and interacting with the vehicle
- haptic feedback: designing interfaces that provide tactile feedback to drivers



testing and validation

- hardware-in-the-loop (HIL) simulation: testing the SDV software in a simulated environment
- V2X communication testing: ensuring the SDV can communicate safely and effectively with other vehicles and infrastructure
- regulatory compliance testing: making sure the SDV meets all relevant safety and security regulations



finding the right partner.

Achieving your SDV vision requires an unwavering commitment to innovation. When it comes time to access a flexible and scalable source of expertise and solutions that can give you the edge in this highly competitive field, your choice of partner matters. Look for a partner that can check off the following capabilities:

deep automotive expertise

With over 30 years of experience in the automotive industry, Randstad Digital has a profound understanding of the unique challenges and opportunities associated with SDVs. This translates into tailored solutions that effectively address your specific needs.

end-to-end solutions

Randstad Digital offers a comprehensive approach that encompasses the entire SDV development spectrum. We can help you fill gaps in expertise at every stage of the SDV development and deployment process, from software engineering and cybersecurity to AI and testing and validation.

global reach and scalability

With a presence in 10+ countries and 48+ sites, Randstad Digital has the global reach and scalability to support SDV projects regardless of location. We can assemble and manage geographically dispersed teams for seamless collaboration and efficient project execution.

focus on innovation

Randstad Digital stays at the forefront of the SDV landscape by continuously researching, developing, and implementing cutting-edge solutions. We leverage our vast network of industry partners and academic institutions to give you access to the latest advancements in SDV technology.

agile and flexible delivery models

We understand that the SDV landscape is constantly evolving. Randstad Digital offers flexible engagement models that adapt to your requirements. We can provide both project-based solutions and dedicated teams to seamlessly integrate with your existing workforce.

proven track record

Randstad Digital has a successful track record of delivering innovative SDV solutions for top automakers and Tier 1 suppliers. We can showcase our expertise through real-world case studies demonstrating the value we've delivered to clients.



the benefits of partnership.

Choosing Randstad Digital for your SDV needs means you get a trusted partner with unparalleled automotive industry expertise, a comprehensive solutions approach, a global footprint, and a relentless focus on innovation. Some of the benefits of this arrangement include:



get to market faster

access to expertise and solutions via scalable engagements lets you ramp up efforts quickly and efficiently to get SDVs to market faster.



optimize costs

partnering with Randstad Digital helps you reduce the costs of SDV development.



drive innovation

access to diverse perspectives and cutting-edge expertise fuels creative, innovative ideas and advanced solutions for SDV projects.



enhance competitiveness

with a strong, flexible SDV expertise foundation you can stay ahead of the competition in a rapidly evolving market.





about randstad digital?

Randstad Digital is a trusted digital enablement partner that facilitates accelerated transformation for businesses by providing global talent, capacity, and solutions across specialized domains. Our digital talent solutions allow you to seamlessly scale your team while connecting you with skilled professionals around the world who align with your chosen technologies. Our focus lies in managed programs, and we empower businesses to move at speed and achieve goals efficiently. We support four service lines, including customer experience, cloud & infrastructure, data & analytics, and digital & product engineering in addition to three engagement models, including talent services, global delivery centers and managed solutions. For more information, see www.randstaddigital.com.

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