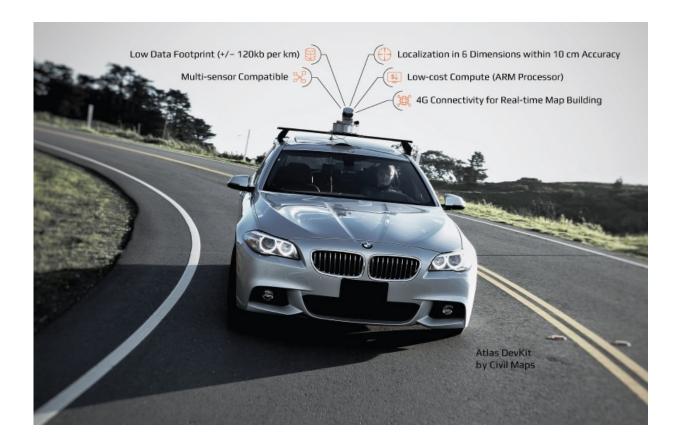# Beckoning self-driving car developers seeking machine readable maps that can be crowdsourced

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(Tech Xplore)—Plenty of tech talk from startups and big car makers focus on the bright future ahead. With all the buzz about tech-loaded

cars able to stop and start and break and see autonomously, however, the specific topic of mapping can no longer be ignored.

Observers agree that creating 3-D computerized maps is, as *E&E News* remarked, "a huge but overlooked challenge in developing the self-driving car industry." This involves providing maps with details on stoplights, lane markings, exit ramps and more that can be updated in real time. The ideal maps would allow the car to pinpoint its location and interact with its surroundings.

One company now intent on showing what it has developed in the way of maps for autonomous cars is Civil Maps. They want to speed up map data collection. The company, founded in 2013, has offices in San Francisco and Hyderabad.

The latest news about them is that they have announced the release of their Atlas DevKit platform. This is hardware and software for a real-time creation and conversion of sensor data into 3-D semantic map data.

Kia Kokalitcheva said in *Axios* that Civil Maps is focused on detailed three-dimensional maps that are constantly updated.

The company is described as "a developer of cognition systems for autonomous vehicles" in a press release, "enabling them to crowdsource high definition, machine readable dynamic maps for safe driving."

The company said that "we are creating a new generation of maps that enable fully self-driving cars to traverse any road safely and comfortably without any human intervention."

The kit involves car-mounted hardware and companion software. The company said its platform runs via a single board ARM processor.

Installation is easy; the company release said developers mount the kit to a car's roof rack and use it with Civil Maps' machine learning software.

Who is the target audience? Self-driving car developers and those who want to build high definition maps that can be crowdsourced.

*Axios* said the company is "now making that kit available to outside companies and teams working on self-driving cars as a starting point."

The team thinks such collaboration will be crucial to self-driving cars. VP of R&D and co-founder Fabien Chraim told *Axios* "we need a unified view of the world and a very precise view of the [world](#)."

Sravan Puttagunta, Co-founder and CEO of Civil Maps, said, "Advanced localization, map creation, and crowdsourcing of maps are key challenges facing those hoping to test and deploy autonomous [vehicle](#) technology."

As for the hardware, there are third-party sensors such as LiDAR, cameras, measurement systems, and communication devices in a self-contained, package, which is plug-and-play

An alternative version of the platform, the Atlas Lite DevKit, integrates with a vehicle's existing sensors.

"Use the kit sensors or your existing ones," said the video captions, to convert the data into 3-D semantic maps in realtime.

The video said it provides geospatial data collection and advanced localization.

What does that actually mean? The Atlas DevKit used with the Civil Maps software, enables a car to localize itself in six dimensions (x, y, z,

roll, pitch, yaw) within 10 centimeter accuracy, according to Civil Maps. "When combined with Civil Maps HD 3-D semantic maps, the car not only knows where it is, but it also gains the ability to anticipate and remember objects in the physical world."

Civil Maps is able to offer the full Atlas DevKit platform to qualified customers in packages that start at $20,000 as part of an R&D contract with the company, said the news release.

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