

SAST Q&A

Module	Question	Answer
Company background and business model	Who is SAST?	SAST develops an open IoT ecosystem creating common ground for innovation and growth in the security industry. The ecosystem includes an open operating system, a development environment for app developers, and a portal for integrators. Security and Safety Things GmbH (SAST) public launch as a company was in September 2018. The SAST ecosystem is expected to go online in the course of 2019. First partners are already developing apps based on the SAST ecosystem.
	What does SAST want to achieve?	SAST's goal is to become a major IoT ecosystem, initially focused on the security cameras segment.
	Is SAST its own business entity? What is the connection to Bosch? What is Bosch's role besides funding the company?	SAST is currently funded 100% by Robert Bosch GmbH at the group level, i.e. not at the Bosch Building Technology or Security Systems level. SAST is open to get additional investors, to underline the role as industry standard platform across multiple players. Having said that, several entities of the group are potential partners for SAST, e.g. Bosch security cameras, Bosch Integrator, or Bosch Building Technology.
	What is the business model of SAST?	SAST plans to generate revenues by operating the application marketplace including the commercial backend, and participating in the app revenue.
	What makes up the security camera ecosystem? In what ways do you expect the ecosystem to change with SAST's initiative?	There are many players in the complex and exciting security camera ecosystem, starting from the end-user, who is typically a facility operator, and then there are the integrators, installers, distributors, software and solution developers, as well as camera and SoC manufacturers. SAST fosters collaboration between each individual player of the ecosystem to create innovative solutions.
	What are the benefits for different ecosystem players?	Developers – (i) Open and secure operating system (ii) Opportunity to monetize apps via global marketplace Integrator/Distributors – Access to marketplace of ready-to-use applications enabling new business opportunities and shorter lead times. On top, developers have access to a developer community; who can support integrators developing customized solution for their customers. End users/facility operators – Benefit from great selection of innovative security applications Device manufacturers – Lower cost for development and shorter lead-times through standard operating system. Opportunity to compete on value, not only on price.
	What is the advantage of SAST vs. other, more generic IoT platforms?	SAST's ecosystem is an open IoT platform with an Android-based, open and secure operating system and infrastructure that was optimized for camera-based applications (e.g. state-of-the-art video pipeline for running multiple apps simultaneously). Moreover, SAST has deep expertise in the security industry and therefore has a more targeted offering, incl. data privacy, security, targeted applications
	By when can other investors get on board and invest into the company?	We are open for discussions with potential investors
	What is the investment made on behalf of Bosch? By when do you have to make a profit?	Robert Bosch GmbH views SAST as a strategic investment into the digitalization and particularly IoT solutions. Bosch has committed substantial funding to sufficiently cover capital requirements over the next few years. We do not as a general rule disclose financial figures, particularly at this stage of our development
	What is the planned turnover for 2019 and 2020?	Our commercial launch is planned in the course of 2019. We do not disclose financial figures.
	Who is SAST for?	The SAST ecosystem offers different use cases to the various stakeholders along the security camera value chain. The most common users of SAST will be solution designers who develop applications based on the SAST technology and operating system. Furthermore, integrators will integrate and manage their applications via their SAST interface. Also, facility operators are able to keep better track of their security camera setup.

	What is the Open Security & Safety Alliance and what its connection to SAST?	<p>The Open Security & Safety Alliance has been created to bring together organizations which share a similar vision of our market. One where a common operating system, single IoT infrastructure and standardized interfaces can be used to address challenges including data security, to accelerate innovation and to support the creation of new business models such as Software as a Service. The founding members of this independent, open alliance have been working together since the beginning of 2018 to define priorities and share the vision with early members. The alliance is currently working on the creation of a technical concept outlining the requirements of the market which will be used to build the enablers for these solutions.</p> <p>Since inception, the alliance has been working with Security and Safety Things (SAST) GmbH, a Bosch startup which is investing in the creation of a new IoT platform for the industry comprised of an optimized and hardened operating system based on Android Operating System Project (AOSP). This platform also includes an environment for app development and an app store for deployment with the accompanying infrastructure. Our initial implementations are focusing on video surveillance cameras running on SAST's platform. The two organizations are working closely to drive this initiative across the security, safety and building automation markets.</p>
	Does SAST exclude vendors from specific regions, e.g. camera manufacturers from China?	SAST is open to work with all vendors and camera manufacturers and focuses first on the ones that are Open Security & Safety Alliance members.
	What additional IoT domains/devices will the ecosystem be extended to support in future?	SAST focuses on security cameras. In future, we might expand to other IoT devices according to market demand
	In what price range will apps be sold?	SAST does not define the price of apps. The price of apps will be defined by the app provider.

Solutions	What products and services does SAST offer?	<p>Security and Safety Things GmbH (SAST) will offer an open and secure operating system and infrastructure for surveillance solutions</p> <p>This will include</p> <ul style="list-style-type: none"> - an app store with ready-to-use solutions for camera-based use cases across industries - an open and secure camera operating system and infrastructure - a software developer portal - portal for providing knowledge and functionalities tailored to integrators
	What use cases does SAST support?	SAST can be applied across most industries, including security applications, business intelligence, and lifecycle management – enabling use cases such as automated car park access, heat mapping, queue management, smart energy and many more
	What are applications for SAST apps beyond cameras in smart buildings and IoT devices?	For now, we focus on B2B cameras for security and business intelligence use cases, e.g. heatmapping, object recognition. In future, based on the open platform we expect to see a vast range of new use cases, many of them will be beyond today's imagination.
	What are some features/use scenarios we can expect from AI-equipped cameras?	AI-equipped cameras will be able to run more complex applications directly on the camera. This will allow for new use cases in object recognition, e.g. understanding people's emotions in a shopping mall or identifying suspicious abandoned objects at an airport. Furthermore, via the SAST platform, it will be much easier to connect this information to external systems, e.g. sending information on the level of customer satisfaction to a sales agent to provide help and advice.
	You mention Artificial Intelligence unlocking new security camera functionality, such as facial recognition; isn't facial recognition already well in use?	Correct, AI is already in use. With SAST's offering, however, the best AI solutions will be available across the whole ecosystem, for all camera types, and for all integrators and other solution providers. This will increase both the quality and the future development speed.
	You say SAST anticipates specialized software applications will emerge as a significant growth segment during the next five years; can you give some application examples of what you expect?	Advanced, specialized applications will span various industries. For example, in retail, AI-driven analysis of customer traffic will allow for display optimization in real-time; in transportation, intelligent systems will detect suspicious behavior and inform security personnel automatically.
	When will SAST solutions be available?	The SAST ecosystem is expected to go online in the course of 2019. Selected solutions will be available from the start, but will quickly grow in numbers as more developers and integrators join and more devices can be connected.

Camera	Where can I get a SAST camera?	<p>We assume that camera manufacturers will begin to launch SAST enabled cameras in 2019.</p> <p>For development testing you can use our SAST testing/reference cameras. For more information, contact us contact@sast.io</p>
	Will solutions developed on the SAST platform only run on next-generation cameras or is there backward compatibility?	<p>First, SAST will focus on next-generation cameras. Commercial launch is expected in 2019.</p> <p>In the future, SAST expects that there will be solutions available to address backwards compatibility.</p>

	How will apps be installed on cameras/devices once customers purchased them at the app store?	The app mechanism is similar to today's apps on smartphones: Once purchased, apps can be automatically installed to the cameras via an internet connection. Of course, there will be functionalities to manage a diverse set of cameras and control the specific apps on each device.
	What are the advantages of on the edge processing?	1.) Utilize the increasing processing capacity of the edge device, thus reducing the server load; 2.) Operate on the raw signal (rather than encoded) which both avoids the decoding cost and may also be a purer input signal; 3.) Abstract over the difference between the various activity sensors so that the remaining server component (topology estimation) is simplified by being substantially agnostic to sensor type
SAST Infrastructure	Which developers can submit apps and software for the SAST App Store? Is there a registration/membership fee and what is the application process?	Basically every developer can submit an app to the app store. Of course there are quality checks both in onboarding of partners and in publishing of apps.
	Who will screen submitted apps for security/malware and what is the quality approval process for the App Store?	SAST will ensure that apps follow basic standards.
	Will customers purchase the apps as full ownership or will they purchase a license for limited periods of time? Or both?	SAST will allow the app developers to decide from a range of business models.
	What is the open and secure operating system based on and how will it function?	The SAST open operating system is based on the Android Open Source Project (AOSP) and has been extended and hardened for use in devices for the security and safety industry. It includes SAST APIs and extensive documentation, development portals will provide detailed information on this.
	Why use Android?	We extensively evaluated available operating systems for IoT edge devices, and took this decision.
	Why not using Android Things?	We extensively evaluated available operating systems for IoT edge devices, and took this decision.
	What is the difference between Android Things OS and the SAST OS?	
	How do you address IT security?	We take security very seriously and make a continuous effort to elevate the standard of the security & safety industry. If you are an IT security expert, please send your CV to careers@sast.io :)
	Will SAST share core technologies and software code with developers?	All relevant information for developers will be provided in the development portals.
	Are there developer kits available already? What is the point of contact for prospective developers?	Yes, we are now inviting developers and will provide them with developer kits. Right now, we are doing this in a controlled environment approach, and will step-by-step open up our platform in the course of 2019. Please reach out via contact@sast.io or through our hackathon series.
	Will developers need to purchase hardware such as cameras to develop/test apps or will there be a virtual environment for testing functionality?	We will provide software emulators and in addition reference cameras for application development.
	How many developers and integrators are currently helping you to develop the ecosystem?	First partners are already developing apps based on the SAST ecosystem. We are open for more, but we also have to limit the number as long as we are still under development.
	How many developers and integrators do you need to create network effects?	The benefits of our ecosystem will indeed grow with the number of participants, but also with the number of connectable devices. Based on our open operating system, connectivity of devices will grow immediately. Just think of the new possibilities you have when you can connect simple cameras with high-end cameras, so that you can follow your customer traffic through your whole facility.
	When and how do you join the platform?	The SAST ecosystem is expected to go online in the course of 2019, first partners are already developing apps based on the ecosystem. Integrators and developers can go to sast.io and claim early access today.

Regulation / data protection	What's your stance on data protection?	We truly care about IT security in all aspects including the highest standards of data protection.
	Face recognition contradicts GDPR and privacy rights - what do you do to protect rights?	SAST is a global ecosystem providing an open framework for developers and integrators to spur innovation and growth. Since regulations differ from market to market, it's up to developers and integrators to create solutions that are compliant with their target markets. Face recognition can be a useful and lawful application, even within the GDPR jurisdiction, for instance when accessing highly secured areas.
Recruiting	Is SAST hiring?	Absolutely! Please visit www.sast.io for more information on open positions and to contact us.
	How can I apply?	You can apply online, go to www.sast.io
	SAST plans to hire a significant number of additional software developers and IT specialists during the first half of 2019. How many employees (and contractors) does SAST have today? How many do you expect to hire and where will they be located?	Currently, the SAST team consists of more than 80 people, with a high number of IT developers with diverse specialities. In 2019, we plan to hire a significant number of additional employees.
	Although you indicate that you have more than 80 people currently, according to what is on LinkedIn, you seem to have a small team?	In order to get SAST ramped up quickly, in addition to our existing employees, we have also engaged the support of trusted partners and companies in both the software development and business build-up of SAST. This is in parallel to the on-going active recruitment of new employees
CES 2019	Why are you exhibiting at CES?	We are also here to reach out to the Android developer community and developers with experience in computer vision, machine learning and AI from other industries. Our message to them is clear: they can use our open SAST platform leverage their experience and bring it to the video security industry. The opportunities are big. SAST is providing the link to connect the B2C and B2B realms.
	How is your offering relevant to consumers?	Smart cities is a focus area at CES 2019. Our offering makes facilities smarter by using smart cameras. E.g., smart cameras can tremendously help to manage the flow of people through busy locations such as airports, retail stores or event locations.