BB Visual Solutions AS
MANUFACTURE & PRODUCTION

INDUSTRIES
& MARKETS

Department of Business Development
BB Visual Solutions AS

MANUFACTURE & PRODUCTION

In BB Visual Solutions AS we deliver solutions in three main areas: Augmented Reality, Tracking and Navigation, and 3D scanning, planning and modeling.

If you want to learn more about these solutions separately check also "Search by Product, Use and Solution" in "Integrated Solutions" at bbvisuals.no

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Manufacture and Production

We invite you to add your organization's name to the list of distinguished clients in the Manufacture and Production industry who have already implemented our solutions in their workplaces, such as Siemens or Nokia.

As an industry that is both highly complex and dynamic, the Manufacture and Production sector has recently undergone a significant shift towards automation and energy efficiency. At BB Visual Solutions AS, we firmly believe that AR and IT solutions should be a part of this industry.

Equipment:

SMART PANELS:

By using our Smart Panels you are replacing expensive and highly energy consuming machine operation panels that require maintenance and constant check-ups, that can easily be operated by accident or by third parties that are not supposed to.

Smart Panels are economical panels or stickers containing a unique code. These stickers can be read and interacted with via AR glasses from several meters away, enabling hands-free operation. While it is possible to operate Smart Panels using a physical device, such as a phone, we strongly recommend using AR glasses in industrial environments due to their hands-free capabilities. Smart Panels are designed to require no maintenance or physical contact, eliminating the need for cleaning.

Furthermore, Smart Panels are entirely customizable, allowing for the incorporation of any custom machine routine or operation process as a new button. Panel elements can be rearranged, and different panels and interfaces can be displayed, each with its own settings and functionalities depending on the user's role. This simplifies the user's work, allowing for increased efficiency.

Smart Panels are particularly valuable for security reasons, as they can only be operated and viewed by authorized personnel. Additionally, Smart Panels record all actions performed on them, making it easy to analyze any errors in machine operation. Information such as the cause of the error, how to fix it, who committed the error, when it happened, and whether safety protocols were followed can be easily obtained.

One notable feature of Smart Panels is their ability to operate without an internet connection. The actions performed on the panel are logged in the program and will be automatically updated once the device regains internet access.

Smart Panels are compatible with a wide range of devices, including AR and VR glasses, phones, tablets, and other devices with a camera and internet connection.

SMART CHECKLISTS:

Smart Checklists work similarly to the Smart Panel, as they can be operated hands-free and have access to real-time information about the machine. Their main utility is to ensure that certain routines or procedures are being followed in order to properly operate equipment or machinery.

Smart Checklists can either be created manually by an operator, or automatically by creating some kind of script that analyzes information from the machine and determines the tasks that must be followed by staff.

All information will be updated automatically and online, eliminating the need of submitting information manually to the server, which is a waste of time.

At the same time, Smart Checklists can be operated remotely by staff or support if needed.

SMART EYES:

With Smart Eyes you can connect your AR glasses with online support, combining a hands-free virtual operation environment with technical support or supervision, in which the support team can be granted access or operation permission to guide the worker or to assist on technical procedures.

This can be done online without the need of the support team installing any program.

Quality Control:

SMART MARKERS:

Smart Markers represent the next stage in the evolution of QR codes. These markers are significantly faster to read, can be accurately read in real-time by machines from multiple meters away, and can be also read with low luminosity and from almost any angle.
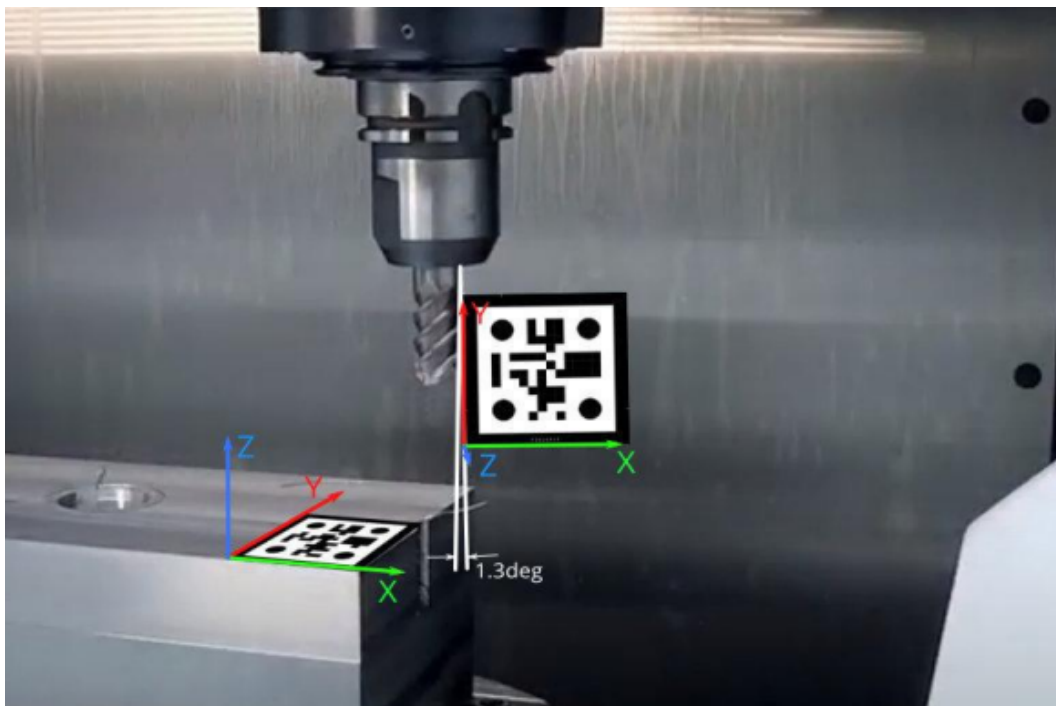
By employing our Smart Markers, users are able to conduct precise, real-time measurements with an accuracy of up to the millimeter. These measurements can include the distance between objects, positioning, inclination, and various other measurements that are made completely hands-free, without the need for any additional measuring or precision tools.

Smart Markers can also offer real-time machine status and operation information, that can be accessed hands-free with AR glasses, or with the use of any phone or tablet.

Smart Markers offer a wide variety of different uses in this industry, and will be explored in the following categories.

HANDS-FREE PDF READER

With our Hands-Free PDF reader solutions for AR glasses you can have access to instructions and information and navigate through them without the need of holding a device or a physical instruction manual, thus allowing you to inspect machinery freely and efficiently while having access to information about it.


Our hands-free PDF reading solution can be operated with simple voice commands, with gestures or by touching the smart glasses, depending on the preference of the customer.

The information can also be updated online both by the operator or by an external agent that will send information instantly to the user, without the need of manually importing it to your smart glasses.

You can customize the size and location of the display of the pdf documents in order to have access to information while working on a comfortable manner easily adjustable to your needs and preferences.

TRACKING AND SMART NAVIGATION SOLUTIONS:

We offer two alternative Tracking Solutions to locate any employee or supervisor in your building that you need. This is a way of ensuring that all check-ups and quality controls are being actually done, and that safety protocols are being enforced.
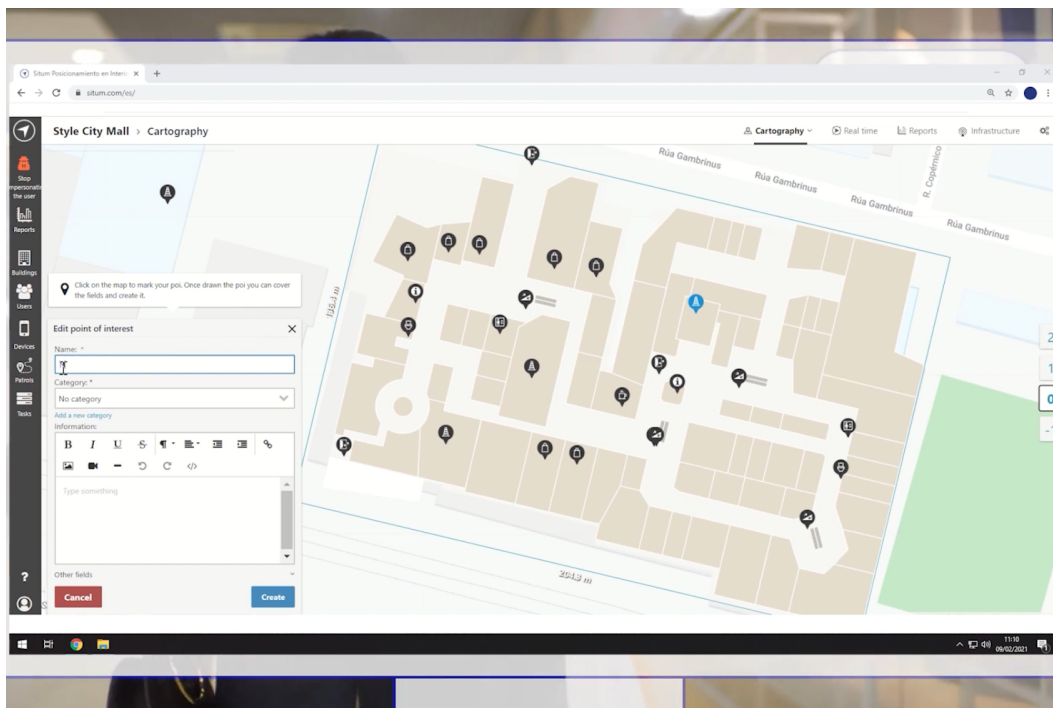
One way of achieving this is with the use of Smart Markers, which has the advantage that it logs these routines or procedures offline, and will be uploaded to the server as soon as the AR glasses gain access to internet connection. This is very advantageous in environments with connectivity problems, such as in facilities that work like a Faraday Cage or underground.

We can also achieve this with an algorithm that creates a coordinate system with your wifi network and using some repeaters or beacons. The main advantage of this procedure is that we no longer rely on using AR glasses or any camera, and works perfectly on any phone or tablet. We are currently testing this on smaller devices similar to Apple Tags that can be carried like a pin, and that would monitor the location inside the facilities.

This second method is much cheaper and easier to implement among a large amount of workforce, as it works on many kinds on devices and does not depend on the camera to detect Smart Markers to locate you on real time.

3D SCANNING FOR FACILITIES:

With the use of our 3D scanning environment and devices you can obtain a 3D point cloud map with an approximately 99% accuracy rate in measurements that can be easily converted in a 3D model or floor plan.

Thanks to this solution you will no longer rely on engineers to update the floor plans or 3D models of your facilities in order to include new machinery, piping or an expansion. Instead you can automate most of the modeling process, and make all of the necessary adjustments.

In the field of Quality Control this heavily simplifies tasks regarding the evaluation of the work environment, facilities, machinery proximity and location, piping and et cetera.

It is also possible to make extremely accurate measurements on these point clouds and 3D models, as well as making 3D tours, deploying them to physics simulation or virtual rendering engines.

SMART CHECKLISTS:

Similarly to the hands-free PDF reader, you can use AR glasses and Smart Markers to deploy Smart Checklists on your workplace as we previously mentioned earlier on.

This easy to integrate technology simplifies quality control as routines can be easily configured and deployed automatically, with protocols and "if statements" if needed.

SMART EYES:

As previously explained, with Smart Eyes you can combine online support with a hands-free virtual operation environment, in which the support team can be granted access and collaborate with operators and workers.

Maintenance:

SMART ALERTS:

Join Nokia on the list of companies upgrading their alert systems to include our Smart Alerts solutions, which provide a more comprehensive alert system with more detailed information easily accessible with your smart-watch, AR glasses or any device.

Give your supervisors or operators more information about alerts, such as parameters, real-time data from the facility or machinery as well as indications on the relevance of the alert.

SMART EYES:

As previously explained Smart Eyes is a solution that allows connectivity between technical support and machine operators and supervisors, as well as technicians evidently.

This allows experts on the maintenance of a machine or a piece of equipment, for example the manufacturer or a technical support team, to involve in the maintenance or inspection of said machine.

This solution also allows companies, specially those with limited resources, to instruct their employees with instructions on the maintenance of machinery instead of hiring a technician for the task.

SMART PANEL:

Smart Panels not only require no maintenance, they also offer technical advantages over traditional control panels, as they can be operated on the dark, they can be easily moved or adjusted, and the lay-out of the buttons can be adjusted depending on the task.

SMART CHECKLISTS:

Smart Checklists can be used both to guide workers on maintenance tasks as well as ensuring that maintenance routines are being followed.

This solution can be programmed to require proof of work, such as automatically recording the actions of the machine operator or allowing him to submit photo, video or audio if necessary.

Facility Expansion and Design:

## 3D SCANNING FOR FACILITIES:

As previously mentioned we offer fast and simple to use 3D scanning technology for facilities, with an extremely high accuracy rate and measurements.

This technology simplifies design process, makes it faster and prevents human errors. It also heavily reduces the number of engineers or architects required to perform this work as it automates a large amount of the design process, something very useful for companies with a tight budget as well as for completing the tasks within time.

Routine and Employee Management:

TRACKING SOLUTIONS:

Ensuring that work routines are being followed is a very complicated task, and specially in large facilities. That is why our tracking solutions are a key part in routine and employee management, as it allows managers or supervisors to automatically determine whether an employee has completed it's tasks and whether the employee has fulfilled his work routines or procedures.
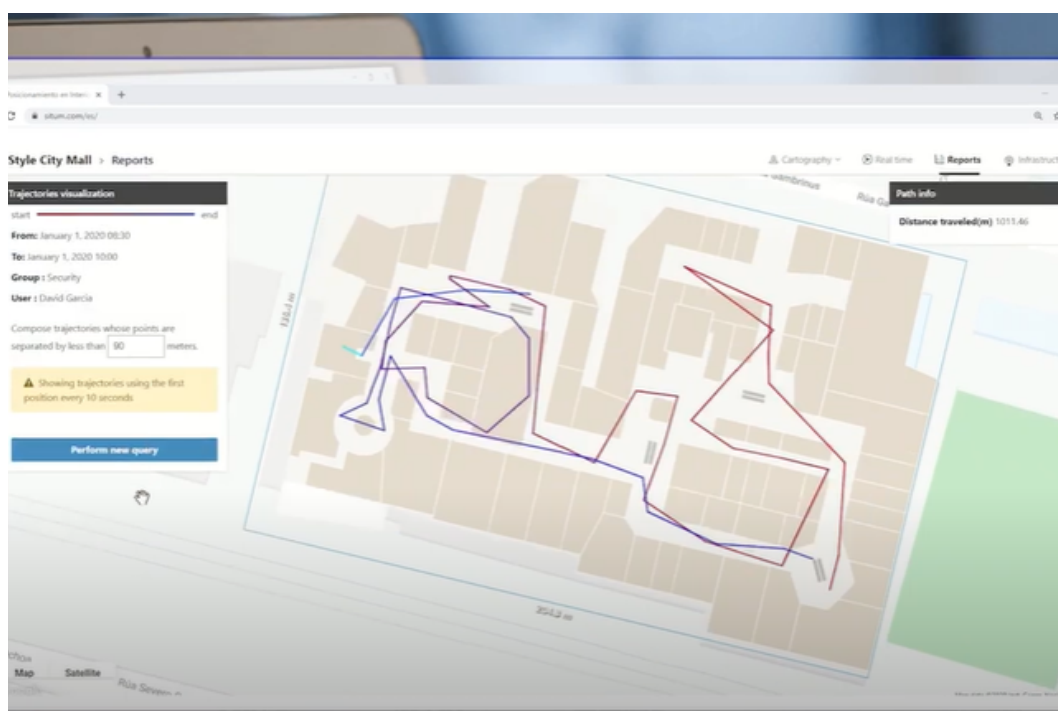
As mentioned earlier on we work with two different kind of solutions, one is specialized to work online and offline, and to record all interactions of a worker with equipment or machinery, and requires the use of AR glasses; and the other is specialized to be mass-integrated among employees and record their movements with higher accuracy, but not their interactions with the machines, and does not require AR glasses.

Nevertheless, these two solutions can be integrated together if needed.

Security:

TRACKING AND SMART NAVIGATION SOLUTIONS:

The tracking solutions mentioned earlier on are an excellent addition to the security of a facility. They not only allow management to track employees or equipment inside of the facilities, but it also allows them to track external agents such as technicians or inspectors in order to both guide them to the right location as well as ensuring that they do not access restricted areas.

In the security matter it is more convenient to use the solution based on creating a coordinates system using wifi networks, as it does not rely on AR glasses.

SMART PANEL:

As previously mentioned, Smart Panels can only be operated by authorized users unlike normal control panels. This is a significant security feature as it only allows trusted individuals to operate machinery, and it is still a very simple method.

Environmental Impact:

Our Augmented Reality solutions are very energy-efficient and environmentally-friendlier than traditional means of machine operation, maintenance and alarm systems.

At the same time, Smart Panels also replace traditional control panels, which is not only a more economical and practical alternative but also a significantly "greener" one.

Communication:

SMART EYES:

As described before Augmented Reality solutions offer an extremely immersive and interactive mean of communication among parties, such as a machine operator and technical support, through a connection between AR glasses and a web-application.

Data Management:

Our AR solutions automatically submits to the server and is capable of logging all the information related to the operation of machinery and equipment, as well as inventories and the input and output of objects manufactured. For example, if an operator releases 500 units of a product this will be logged automatically and all the information related to this will be updated.