



Alphenix



A vertical photograph on the left side of the page shows a medical monitor with a screen displaying various graphs and data. Below the monitor, there is a stack of papers or documents. One of the papers is prominently labeled "QMAPP".

VISIONS spoke with Eric van Antwerpen,
Chief Commercial Officer at Fysicon.

A Complete, In-House Solution for Cardiology

With the acquisition of Fysicon over a year ago, Canon Medical is now able to provide the best image quality with an intuitive hemodynamic monitoring solution, a powerful combination in cardiac care. Eric van Antwerpen, Chief Commercial Officer at Fysicon, discusses how in areas such as interventional radiology and stroke Canon Medical's solutions and its sister company can better fit the needs of the customer and improve patient outcomes.

With the inclusion of Fysicon, Canon Medical now has a broad range of solutions across different modalities, clinical scenarios and workflow systems designed to add real value to the services offered by the hospital. This ability to provide a complete, in-house solution is one of the company's strongest points, according to Eric. "We are the only ones who can supply a complete portfolio; a one-stop-shop. Having a single solution means you don't have any integration issues. Everything works together seamlessly."

Improving and expanding cardiac care

Fysicon's most well-known product is QMAPP, a hemodynamic monitoring system. QMAPP beautifully completes the powerful Alphenix interventional system with cardiac workflow, cardiovascular reporting system and database, to deliver our best possible cardiac imaging and workflow solution. "Today everything inside the hospital is IT-connected. Fysicon adds greater IT connectivity and workflow management to enhance our cardiac solution," he said.



QMAPP attached on Canon Medical's X-Ray system Alphenix.

Combined with the Alphenix cardiovascular X-ray system, QMAPP provides a complete solution for the cardiac lab. For hemodynamic applications, the system typically needs to be replaced after seven years.

The average lifetime of cardiac or x-ray equipment in a dedicated lab or x-ray room, is between eight to ten years. Everything can be planned directly with the customer, to renew equipment and IT when it best makes sense, on a case-to-case basis.

Used in combination with the Alphenix Core, QMAPP also enables to perform cardiac imaging inside a catheter lab, which may prove a smart business decision for small hospitals, Eric explained: "In a general district hospital you facilitate 300 to 350 procedures a year. In a cath lab, that's too expensive. But by having a system like the Alphenix Core and an upgrade

kit such as QMAPP, you can perform cardiac care in this setting, and save money for your hospital."

Information on stents, balloons, devices, valves and any implants are also stored on QMAPP, and can be sent to registries. If companies have an issue with their product, they can consult QMAPP data to find out.

If a facility performs 320 procedures per year in their cath lab, they would break even within approximately five years, while it usually takes a decade for a cardiac lab to generate benefits. "With optimal workflow, customers can add one or two patients per day, which is good from a budget perspective. For patients, it means shorter waiting times before they can have their procedures done," he added.

DataLinQ is another workflow management system used to facilitate a

paperless pacemaker clinic and make pacemaker follow-ups more efficient and less costly. Usually, pacemakers are implanted in the cardiac catheter lab. Fysicon facilitates an IT solution where all the data from the pacemaker is directly fed into the database. Pacemaker follow-ups are usually performed once or twice a year. In the past, all the data generated by the pacemaker in that time was printed on paper, in 4-12 pages-long reports, which were then put into files. When the patient returned to the hospital for a follow-up, the physician don't have time to go through the long reports and would typically read only the first pages.

"An IT system, allows you to directly access all key information on battery state, lead wires, settings etc. and, if necessary, plan a replacement in time based on the trends. You can better follow-up patients and track any changes in their behavior. These trends become evident as all the data on the patient's wellbeing is stored in the system," Eric explained.

With DataLinQ Remote Device Management it is also possible to integrate data from remote device systems into DataLinQ Cardiac Rhythm Management. A message is automatically displayed in the inbox when data from remote device systems are delivered through the hospital server. Both follow-up as well as remote follow-up data are integrated into one database. All the data generated by DataLinQ is exported to national registries, helping to collect data to activate alerts and appropriate chain of actions in case a defect is spotted.

Future applications

The burden of cardiovascular disease (CVD) is set to increase drastically over the next decades. CVD is already the most common cause of death in Europe, responsible for 3.9 million deaths each year. It is a major cause of disability and reduces quality of life. Longevity, improved survival, obesity and the rapidly increasing prevalence of diabetes will continue to boost the number of patients with CVD.

The screenshot shows a table of patient data from the Fysicon DataLinQ CRM. The columns include Patient name, Patient ID, Patient DOB, Procedure, Gender, and Last updated by. The data includes:

Patient name	Patient ID	Patient DOB	Procedure	Gender	Last updated by
Doe, Jon	2332432434	01-01-1965	Follow up	Male	2PAD Device, on 05-06-2015 16:10
Follow up	03-06-2015		Delete		
Paracemaker implant	14-01-2007		2PAD Device		
Monroe, Lucie	5323423	05-04-1955	Follow up	Female	2PAD Device, on 05-06-2015 15:28
Patient name	Patient ID	Patient DOB	Procedure	Gender	Last updated by
House, George	3534543	01-02-1969	Implant	Male	2PAD Device, on 05-06-2015 13:45
Waters, Giel	3637689224	12-11-1977	Follow up	Male	2PAD Device, on 05-06-2015 14:10
Fountain, Gwenn	4565464561	07-02-1965	Follow up	Female	Dr. Davidso, on 03-06-2015 12:00
Patient name	Patient ID	Patient DOB	Procedure	Gender	Last updated by
Damon McLaughlin, Luc	5422653216	02-08-1981	Follow up	Male	Terry Salas, on 05-06-2015 12:00
Patient name	Patient ID	Patient DOB	Procedure	Gender	Last updated by
Duane Beatty, Christina	9271659211	05-01-1959	Follow up	Female	Dr. Davidson, on 02-06-2015 17:00

These factors directly have an impact on rising costs for healthcare and put further strain on healthcare resources. It is currently estimated that CVD costs € 210bn a year to the EU.¹

Optimized workflows and improved resource utilization are crucial to help buckle the trend. The combination of Alphenix and QMAPP can help detect CVD at an early stage, before any complications, such as stroke, arise. Other modalities can also be used to help in the early diagnosis of CVD. The focus should now be on multi-modality sales and along clinical pillars - i.e. cardiology, oncology.

"Selling modalities doesn't work anymore. It's important to think across the clinical pillar because we can offer a whole approach, for example a complete cardiac solution. You can't do everything with one device and that's why you need to use the whole portfolio."

Canon Medical has several high profile academic sites equipped with Alphenix 4D CT, a sliding CT system integrated with an interventional system that can also be combined with ultrasound. This one-room solution avoids the complications and time delays of patient transfer.

"We are continuously looking for opportunities to make the current workflow more efficient, by combining additional modalities, and improving integration and usability," Eric said.

Stroke and oncology are areas in which Canon Medical combined with Fysicon have a lot to offer. Interventional radiology is another area to explore and grow, as procedures are getting more complicated and greater patient monitoring is required.

Connectivity is another important direction with regard to workflow and interoperability, and Fysicon continues to acquire experience in this field.

Smarter, safer and cheaper image transfer

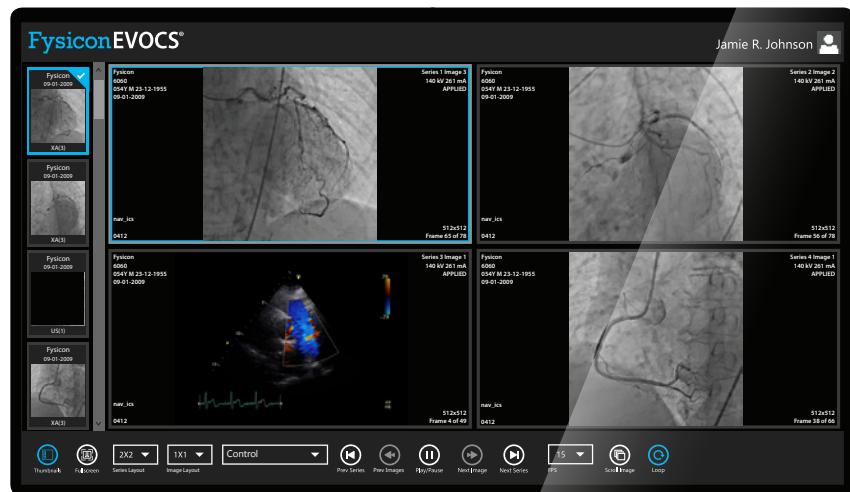
Since 2004, Fysicon develops products based on real world needs, for example, from observations made in hospitals. "We saw a nurse walking by in a cardiac thoracic center with a shopping trolley full of CDs and film scans. These imaging studies were being returned by mail to the hospital that created



the images, where, according to Dutch legislation, they had to be stored. We thought: this is a wasteful practice. We have to facilitate the transfer of images, and make it more reliable and efficient," Eric said.

That was the inception of EVOCS. EVOCS is an image and document sharing system, which transmits images from one hospital to another over a secure Internet connection. With EVOCS, the risk of losing or damaging the images disappears, transfer process is expedited and the data anonymized.

The network was created for cardiology, but could be extended to other departments, which are still using CDs and USB sticks to transfer images – for instance oncology. Oncology would be an interesting area as images from





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Eric van Antwerpen

Joined the Fysicon team in 1996 as freelance application specialist. Before that he had been working as a radiographer, specializing in angiography and diagnostic cardiac care for over ten years.

different hospitals are used in expert panels, for example, in university medical centers involved in large studies and concentrating the data of patients with certain types of cancer.

Stroke is another potential use for EVOCS. Time is brain in stroke management, and EVOCS can help make a difference. “We can help save time when a patient CT information is sent to the neurovascular reference center, to help the neurosurgeon to get the data as soon as possible and trigger the appropriate chain of actions - i.e. keep the patient in observation or prepare the OR right away, when there’s a major bleed that needs to be coiled. This is a much more efficient and cheaper workflow compared to current processes.” EVOCS proved its benefits in the Mr Clean Study, which is the fundament for the Dutch Stroke program.²

Cybersecurity

Cybersecurity is an essential consideration in all IT systems, especially when the systems are exposed to the internet. Fysicon was the first company in the Netherlands that provided data-processor agreements as part of its EVOCS contract. Today such

agreements are a commodity. “We periodically perform penetration tests to ensure that the data is secure.”

Cybersecurity in pacemaker follow-up is crucial. DataLinQ does not communicate with the devices itself, but with the pacemaker programmer and the Remote Monitoring Devices. This prevents any possibilities for a breach.

Data acquired on all Fysicon solutions is encrypted. The used encryption algorithm is the same as with banking and credit card transactions. SSL and network certificates are being used and the access to all systems is secured through username, passwords, user groups and rights, and in some cases even two-factor authentication. These security measures are approved by the US Department of Defense.

Cybersecurity is everyone’s concern inside the hospital: the equipment and IT providers, but also the staff. “We do our software part but expect the hospital to do something. We still see passwords written directly on the computer in some hospitals. Such behavior endangers data security. We must all make appropriate efforts,” he concluded. //

Fysicon
creating medical solutions

About Fysicon

Fysicon designs and develops applications as well as a manufacturing services for Canon Medical. Fysicon was founded 25 years ago as a third-party vendor, which provided systems in combination with all brands to get best of breed for the end-user. Fysicon was acquired by Canon Medical in March 2018, to combine the best of both companies.

Fysicon may not be available in all regions or countries, please contact your local Canon representative for more details.

¹ World Health Organization www.who.int/cardiovascular_diseases/en/
European Cardiovascular Disease Statistics 2017
<http://www.ehnheart.org/cvd-statistics/cvd-statistics-2017.html>.

European heart health charter
<http://www.heartcharter.org>

² <https://www.mrclean-trial.org/>
https://www.spoedzorgnet.nl/sites/default/files/documents/protocol_regionale_inrichting_beroertezorg_strokenet_-_final_juli_2018.pdf