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When Konrad Roentgen discovered the existence of x-rays in 1895, we became able to produce images from inside the human body. The complete volume of the body was reduced to two dimensions on the image. However, the third dimension was still noticeable on the images due to superposition.

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In 1930, Alessandro Vallbona developed a technique for the production of sharp images of single layers of the body: due to their motion blur, the layers in front of and behind the sharply reproduced layer appear as blurring structures in the tomography.

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In 1971, Godfrey Hounsfield presented a new tomography technique, a computer completely extracting the blurring structures of the layers in front of and behind the sharply reproduced layer. Since then tomography images were perfectly two-dimensional. As a matter of fact, this caused new difficulties in the interpretation of the single CT-slices.

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25 years ago, Michael Vannier first reported on three-dimensional reconstruction from single CT slices, thereby restoring the three-dimensionality of CT images which they had lost through the development of Godfrey Hounsfield's technique. We were able, for the first time, to visualize surface models of bones and soft tissue of living human beings. Here you see images of a child with Apert syndrome, a malformation of the skull.

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However, Michael Vannier did not limit the three-dimensional reconstruction to the skull, but expanded it to other organs as well.

Here you see a three-dimensional reconstruction of the heart.

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In 1983, the workstation Michael Vannier used to view the images filled a complete room.

Here you see a Siemens Evaluscope of that time.

Michael Vannier used the CAD System UNIGRAPHICS of McDonnell Douglas Company, as he had discovered that the three-dimensional analysis of aircraft surfaces is comparable to the diagnostic evaluation of bony and soft-tissue facial surfaces.

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Michael Vannier's work established the basis for further developments within the past 25 years, among them

- the surgical planning using stereolithographic models,
- surgical planning of repositioning osteotomies directly on a workstation, and
- the transfer of the surgical planning to the patient with the aid of navigation systems.

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Today we can say that the development 25 years ago was a milestone for

- cranio-maxillofacial surgery,
- neurosurgery and
- cardiosurgery.

Today we celebrate the man who gave us back the three-dimensionality in imaging diagnostics: Michael Vannier.