

CAROLA: An open source PDMS, after 25 years still experimental?

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In 1983 the first Carola PDMS system was introduced for Thoracic surgery ORs. After 25 years it is still operational in all Thoracic OR's at the University Medical Center Groningen the Netherlands and the Kerckhoff Klinik in Bad Nauheim, Germany. Since its inception it has been under constant development, adjusting to the needs and wishes of its users and the changing landscape in computer software and hardware. Carola PDMS data from more than 100,000 thorax operations (since 1985) are accessible through a web interface.

- What is the secret to Carola's longevity?
- What can it do what other PDMS systems can't?
- Is comparable software available from commercial vendors?
- What are the advantages of open source software?

In the introduction the goals and design principles behind Carola will be highlighted. Using real-world-examples, it will be described how Carola is used in the OR, how it communicates with the user, how equipment is interfaced, and how data are imported from and exported to external systems. A short description of how a Carola system can be set up will also be given.

A Carola satellite system has also been developed for technicians operating a heart lung machine. Data sharing in the OR between it and the Carola Anesthesia system will be described.

PDM Systems are an essential part of medical care in the information age, but they can be complex and extremely costly. Not only purchase costs need to be considered, but also the costs of maintenance, software and hardware updates and new developments need to be considered. The Carola approach, using a stable open source platform, attention to software and hardware portability have kept these costs low, while at the same time allowing the flexibility to adapt to 25 years of changing hardware, software and evolving user expectations. Examples of how Carola can be adapted to some expected new developments in the coming years will be described.