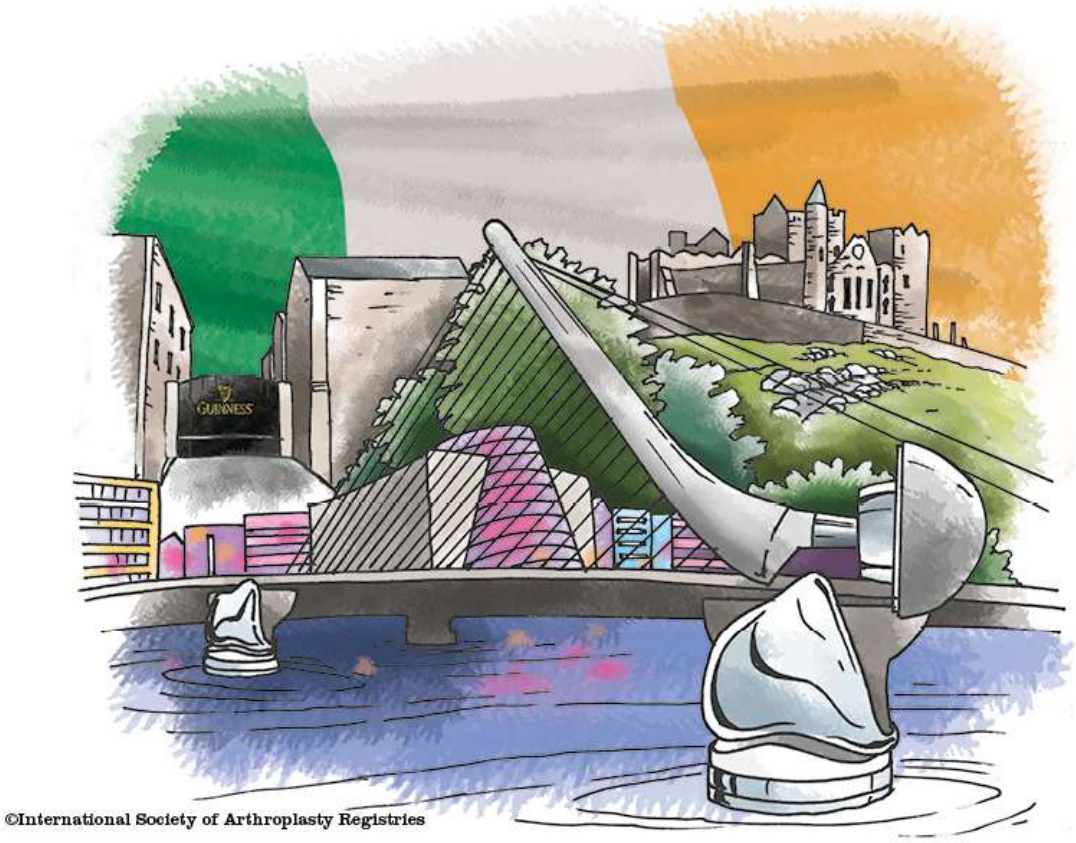

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The modularity of RIPI: a common infrastructure of independent but connected registries

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Introduction
Starting from the positive experience of RIAP and RIDIS, Italian Arthroplasty and Spinal Implant Registries, a multi-registry system (RIPI) has been created to assess various implantable medical devices (IMDs) in terms of effectiveness and safety and to trace them for post-market safety-related activities. Currently RIPI involves joint prostheses, spinal implants, pacemakers and defibrillators.

Materials and Methods
Following the principles of the software engineering, we renovated the informatic structure to decouple data relevant for all the registries from data completely registry-dependent. Data were modeled according to the rules given by Extensible Markup Language (XML) for their formal representation.

Results
RIPI has become a unique structure that covers the features in common to all the IMDs, allowing them to be compliant to regulatory requirements and able to trace devices and patients. Any mandatory upgrade can be applied involving RIPI only: specific registries can undergo any modifications related to the IMDs they cover, according to market evolution or to the clinical variables that need to be collected, without touching any parts of the general RIPI source code.

Discussion
Thanks to this renovation, RIPI appears to be an essential connector for all the specific registries, because each registry has an independent management, but its results are meaningful only if included into RIPI.
The strategy of decoupling common data from the specific ones gives RIPI a more modular structure. This implies a less management effort and permits to easily add other new registries and enrich data collection in a more immediate way.

Notes