



## EMRP RESEARCHER GRANT FINAL REPORT

EMRP Researcher Grant Reference:	SIB06-REG1
Parent JRP number and short name	SIB06 BioQuaRT
Parent JRP full title	Biologically Weighted Quantities in Radiotherapy
Version number of latest contracted Research Schedule (Annex 1) against which the assessment will be made	Research Schedule: V1.3
Period covered (dates)	From 1 December 2014 To 31 May 2015
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**Report Status: CO** Confidential, only for members of the JRP-Consortium (including EURAMET and the Commission Services)

**SIB06-REG1  
BioQuaRT**

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**SIB06-REG1  
BioQuaRT**

## **1 Summary of EMRP Grant Researcher's activities (Max. 1000 characters)**

Please provide a summary (max. 1000 characters) of progress, on a deliverable by deliverable basis, illustrating achievements and issues during the final months of the RG. Include a statement of whether the Researcher Grant met its targets or not and mention impact and uptake of the RG's results.

REG1(INFN) worked within WP1, experimental microdosimetry, and WP2, nanodosimetry, of BioQuaRT project. Common microdosimetric measurements in joint beam times at CNAO therapeutic centre have been done using Si-microtelescope and mini-TEPC. Moreover, a very preliminary comparison between the two device outcomes have been done: they are in good agreement.

Within WP2, that is the nanodosimetry workpackage, last deliverables concerned the report of the different measurements and the comparison among the different nanodosimeters. Three different nanodosimeters measured the same carbon beams at the same energy. Even if the three devices are very different, the cumulative nanodosimetric quantities,  $F_k$  against  $M_1$ , lie in a unique monotone curve.

Finally, the deliverable REG D3.3 (JRP D2.4.4) concerned a design study of a multi-scale track-structure measurement device. A concept idea of a device that would be able to measure the ionization events in a range that spans from some nanometres up to 20 micrometres.