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# Moving forward with the redefinition of the Devonian/Carboniferous Boundary

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## Abstract

The definition of the base of the Carboniferous has been back on the agendas of the Devonian and Carboniferous subcommissions for more than a decade. This became necessary after the discovery of the marker fossil for the base of the Carboniferous, the conodont *Siphonodella sulcata*, in the GSSP section at La Serre, southern France.

A joined SDS/ISCS Task group has been working on the redefinition of the base of the Carboniferous for more than ten years. Its overall aim is to regain stratigraphical stability in this critical interval of Earth history without fundamentally changing the position of the DCB in respect to previously used levels for the base of the Carboniferous.

The working group has been following the basic idea that a newly defined boundary level has to ensure the best possible correlation across facies realms and palaeocontinents, and that the recognition of the boundary should be the most user-friendly. In this respect, the new boundary should not depend on a single criterion, but be based on a suite of multiple criteria.

In this respect, the working group has been focussed on multi-disciplinary approaches, which combine palaeontological, sedimentological, geochemical and petrophysical methods and data, setting points in time during the latest Devonian and earliest Carboniferous.

This has resulted in a calendar, which precise a succession of widely recognizable points in time for the latest Famennian and earliest Carboniferous. Since this DCB calendar combines results from very different facies realms, it is self-understanding that a section comprising all listed points will not exist. However, the application of this calendar enables to place every section as precise as possible into the framework of the DCB. Additionally, it clearly helps to identify local or regional variations and discrepancies due to e.g. facies differences or faunal particularities, and hence to adapt the position of the boundary accordingly. Thus, even a delayed entry of a stratigraphic marker would have less influence on the boundary position and the global correlation. The work on the calendar also implies revisions on existing biostratigraphic zonal schemes.

The working group is currently working on a proposal for the criteria for the new DCB definition. If everything falls in line, this proposal will be accepted by SCCS before STRATI 2023, and thus could be officially presented at Lille.

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