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The 2016 Edition of the 1: 1 million scale geological map of the Republic of SA, and the Kingdoms of Lesotho and Swaziland

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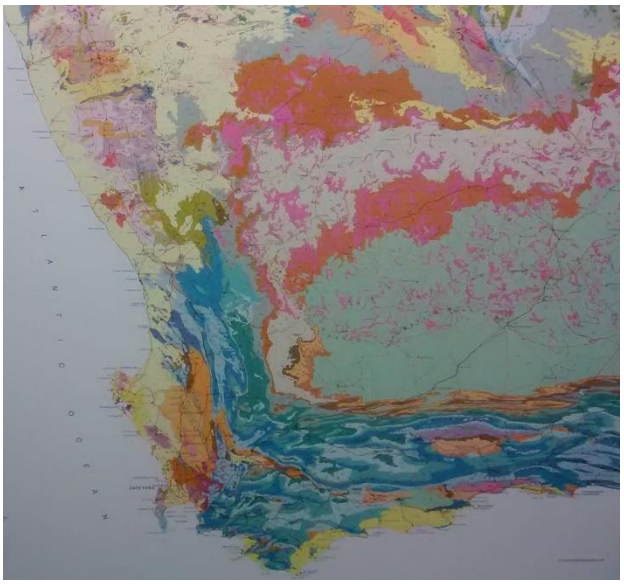
The last edition of the geological map of the Republic of South Africa and the Kingdoms of Lesotho and Swaziland was released by the Council for Geoscience (CGS) nineteen years ago (Keyser [1]). The Board of the CGS has therefore approved an updated version to be produced for release at IGC 35 in 2016. The project proposal was compiled by a team of seasoned mapping experts and approved by Management in 2014. The plan was to compile from scratch using the 1:250,000 scale digital geological data of the CGS. Most of this data have been available for many years, but a few maps in western Namaqualand have only been released recently and would therefore cause major changes to the new 1: 1 million scale compilation in that area. In addition, many other detailed subdivisions of units on the existing version were to be shown this time round. A multitude of new age dates that became available since 1997 was also expected to cause major changes to the map legend. This was also the first time that the map would be compiled in a fully digital, GIS environment.



The actual compilation process was preceded by the task of updating the 1:250,000 scale database in terms of line seamlessness across map boundaries, revision of nomenclature and decision-making on what should be shown on the new map version. This task was assigned to small work teams at the regional offices of the CGS, working with various experts as they deemed fit. Much of this work was completed in 2014 still. This was followed in 2015 by compilation of the map in two parts from the simplified 1:250,000 scale dataset, which was superseded in 2016 by vectorising, polygon building, coding, and legend compilation. These delivered products needed continuous review and updates of the spatial database.

Figure 1: SW portion of the 1: 1 million 1997 Edition

A by-product of the compilation process is the first largely seamless set of 1:250,000 data for South Africa and a refinement of the data attribute tables to now include information on geochronological ages, metamorphic grade, terranes, as well as a conversion away from old SA stratigraphic age

nomenclature such as Vaalian, Mokolian and Namibian to the appropriate new IUGS classification names for Eons, Erathems and Periods.

References:

[1] Keyser, N. (1997). Geological map of the Republic of South Africa and the Kingdoms of Lesotho and Swaziland. Council for Geoscience, Pretoria, South Africa.