GEOSCIENCE AUSTRALIA'S CONTRIBUTION TO AUSARRAY – PASSIVE SEISMIC IMAGING OF AUSTRALIA

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Geoscience Australia (GA), as a part of the exploring for the future programme, is aiming to create a high resolution three-dimensional (3d) seismic model of Australia to infer physical properties of the lithosphere from depths of few meters to hundreds of kilometres. This work is based on new data collected from national seismological network and a new movable seismic array complimented by legacy seismological data obtained by universities. Ga has deployed a movable array of 135 broadband seismic stations for one year between Mount Isa and Tennant Creek arranged in a grid pattern with interstation distance of approximately 55 kilometres in order to attain horizontal resolution of at least 20 kilometres. This dense network is reinforced by fifteen semi-permanent higher sensitivity broadband seismic stations located predominantly in the northern territory and Western Australia in order to increase imaging resolution within the array and within areas where national seismological network has gaps. Multiple seismological methods are being combined together to obtain robust constraints on 3d lithospheric architecture. For the first time, particular attention is focused on shallow structures located at depths of less than 1 kilometre.