From 1990 – 1991, magnetic repeat station network in Vietnam has been built. It includes now 58 stations, distributed on all the territory of Vietnam. The measurements of the geomagnetic field were carried out in 1990 (8 stations), 1991 (56 stations), 1997 (56 stations), and 2003 (58 stations), using the Fluxgate theodolite D-I Flux and proton precession magnetometer, in the frame of the scientific co-operation between the Paris Institute of Physics of the Earth and the Vietnam Institute of Geophysics. This presentation presents the results of calculations of the models of magnetic fields and their secular variations from all these surveys of the Vietnamese array of magnetic repeat stations. The construction of these models, especially those of secular variation, meets with difficulties due to the irregular geometry of the territory; the shape of this territory looks indeed like an elongated “S” oriented in the North-South direction. For the models of SV, the computation is based on the values from different number of SV stations, sparsely distributed all over the territory of Vietnam, and in addition, on some weighted values of IGRF outside the territory of Vietnam. One shows the characteristics of the magnetic fields and their secular variations (for all 7 magnetic elements: North component X, East component Y, Vertical component Z, Declination D, Inclination I, Horizontal component H and Total field F) from the obtained models. One discusses about the obtained results.