METEO ON SKIS: AN INNOVATIVE AND EASIER WAY TO DEPLOY AND SERVICE AUTOMATIC WEATHER STATIONS IN ANTARCTICA.

Philippe Dordhain (Antarctic consultant – Easberg)

The maintenance of the AMRC AWS network in Adélie Land is performed during the annual Dome C traverse in summer. The traverse is a 3 week journey with heavy tractors and sledges across the continent from the coastal french station Dumont d’Urville (66°39’S 140°00’E; 40 m asl.) to Dome C (75°06’S 123°20’E; 3, 233 m asl.), to supply the Franco-Italian Concordia station with fuel and other cargo. Servicing operations on the AWSs must be fast and efficient to limit disruption of the traverse. To further reduce disruption in the future, it was decided last summer to redeploy some of the stations on sledges. This idea was tested on the D47 AWS (67°23’S, 138°43’E; 1560 asl.), then extended to the D85 AWS (70°25’S 134°08’E; 2650 m asl.) and to an LGGE station at D17 (66°43’S 139°42’E; 450 m asl.) along the DDU - Dome C transect. The D10 AWS (66°42’S 139°48’E; 243 m asl.) should be modified next season. The sledge concept results in several noticeable improvements for the maintenance: i) the whole maintenance process is considerably easier and faster; ii) it gives better standards of measure since AWS can be repositioned on the same spot while the ice drifts, and the measurement height can be kept constant from one year to another one; iii) it is eco-friendly because batteries don’t have to be kept buried and abandoned when replacement is needed; iv) the system could be used for classical stations on temporary sites for short term measurements.