Process to update Goat\_IGGC\_65K\_v2 Illumina chip

* Start from the [previous design](https://www.goatgenome.org/data/Goat_IGGC_65K_v2-SNP-number-and-categories_IGGC_website-vf.xlsm) validated through the genotyping of 384 animals = 59727 SNPs
* REMOVE 2703 SNP (GenTrain Score =0 or useless duplicates or GBS SNPs performing badly)
* ADD 3,472 (362 duplicates either within the Add-On or in the final design) new GBS SNPs (Rudiger Brauning)
* ADD 10,133 (10,010 on autosomes) representative SNPs from VarGoats VCF file (Andrea Talenti)
* ADD 1,529 (398 duplicates=SNPs present in the available 10K IMAGE chip) ancestral SNPs from IMAGE chip design (Licia Colli & Gwenola Tosser-Klopp)
* ADD 48 new variations in casein cluster (Guilherme Neumann & Siham Rahmatalla)
* ADD 20 new variations to genotype CSN1S1 null alleles 01 & 02 (Get-PlaGe sequencing platform, Mathieu Charles & Gwenola Tosser-Klopp)
* ADD 803 (10 duplicates) SNPs in candidate genes or candidate regions (Gwenola Tosser-Klopp & Philippe Bardou)
  + SHBG/TMEM154/PAEP/orthology with paratuberculosis region in cattle (kindly provided by Mekki Boussaha and M.P Sanchez, GABI, INRAE)
  + casein cluster ~1MB
* ADD 1,654 LOF mutations from VarGoats (Marcel Amills & Maria Luigi)
* ADD 4,267 gap fillers (Philippe Bardou)

Goat\_IGGC\_75K\_v3 = 57024+21926= 78950 variants