Absolute Galois Group defined as Galois group of algebraic numbers regarded as extension of rationals is very difficult concept to define. The goal of classical Langlands program is to understand the Galois group of algebraic numbers as algebraic extension of rationals - Absolute Galois Group (AGG) - through its representations. Invertible adeles -ideles - define Gl_1 which can be shown to be isomorphic with the Galois group of maximal Abelian extension of rationals (MAGG) and the Langlands conjecture is that the representations for algebraic groups with matrix elements replaced with adeles provide information about AGG and algebraic geometry.

I have asked already earlier whether AGG could act is symmetries of quantum TGD. The basis idea was that AGG could be identified as a permutation group for a braid having infinite number of strands. The notion of quantum adele leads to the interpretation of the analog of Galois group for quantum adeles in terms of permutation groups assignable to finite l braids. One can also assign to infinite primes braid structures and Galois groups have lift to braid groups.

Objects known as dessins d'enfant provide a geometric representation for AGG in terms of action on algebraic Riemann surfaces allowing interpretation also as algebraic surfaces in finite fields. This representation would make sense for algebraic partonic 2-surfaces, and could be important in the intersection of real and p-adic worlds assigned with living matter in TGD inspired quantum biology, and would allow to regard the quantum states of living matter as representations of AGG.
Adeles would make these representations very concrete by bringing in cognition represented in terms of p-adics and there is also a generalization to Hilbert adeles.