1048-16-98 **Joost Vercruysse*** (jvercruy@vub.ac.be), Department of Mathematics, Faculty of Engineering, Pleinlaan 2, Brussel, Belgium. *Hopf-Galois theory and the quasi-co-Frobenius property.*

A ring extension $\iota : B \to A$ is called an H-Galois extension for a Hopf algebra H, if there is a coaction of H on A, such that $B \subset A^{coH}$, the H-coinvariants of A, and the cannonical map $A \otimes_B A \to A \otimes H$, is bijective. More general, a B-A bimodule Σ is said to be a C-Galois comodule for an A-coring C, if Σ is a right C-comodule, $B \subset \mathrm{End}^C(\Sigma)$ and the canonical map $can : \mathrm{Hom}_A(\Sigma, A) \otimes_B \Sigma \to C$ is bijective.

We study the situation $\Sigma = C$, in a framework where B is a ring with local units. This allows us to characterize quasi-co-Frobenius corings as faithfully flat Galois comodules or as (locally) projective generators in their category of comodules. Our theory can be specialized to coalgebras and Hopfalgebras, in which case we obtain some new results and new proofs for well-known results. (Received January 29, 2009)