Notation

$\mathcal{U} \triangleq$ universe of ACL2 values

$$\left.\begin{array}{l} \omega_t \triangleq \text{guard obligations of } t\,;\ \omega_t \subseteq \mathcal{U}^n \\ \sqrt{t} \triangleq [\omega_t = \mathcal{U}^n] \ - \ t \text{ is guard-verified} \\ FV(t) \triangleq \text{free variables of } t \end{array}\right\} \ t \text{ is an ACL2 term with } n \text{ free variables}$$

$t[t_1/t_2] \triangleq$ replace every occurrence of t_1 with t_2 in t, where t_1, t_2, t are translated terms without <u>let</u>

$[t_1 \equiv t_2] \triangleq$ t_1 and t_2 are the same term

$$\left.\begin{array}{l} \delta_f \triangleq [\, f(\overline{x}) = \ldots \,] \ - \ \text{definition of } f \text{ (if defined)} \\ \mu_f \triangleq \text{measure of } f \text{ (if recursive)}\,;\ \mu_f : \mathcal{U}^n \to \mathcal{U} \\ \prec_f \triangleq \text{well-founded relation of } f \text{ (if recursive)}\,;\ \prec_f : \mathcal{U} \times \mathcal{U} \to \mathcal{U} \\ \tau_f \triangleq \left[\bigwedge_{j=1}^{j=m} \left(\psi_j(\overline{x}) \Rightarrow \mu_f(\rho_{j,1}(\overline{x}), \ldots, \rho_{j,n}(\overline{x})) \prec_f \mu_f(\overline{x})\right)\right] \ - \ f \text{ terminates (if recursive)} \\ \omega_f \triangleq \text{guard obligations of } f\,;\ \omega_f \subseteq \mathcal{U}^n \\ \sqrt{f} \triangleq [\, \omega_f = \mathcal{U}^n \,] \ - \ f \text{ is guard-verified} \\ \gamma_f \triangleq \text{guard of } f\,;\ \gamma_f \subseteq \mathcal{U}^n \\ [\, f \subseteq \mathcal{U}^n \,] \triangleq f \text{ is (used as) a predicate} \end{array}\right\} \ \begin{array}{l} f \text{ is an ACL2 function} \\ \text{with formals } \overline{x} = x_1, \ldots, x_n \end{array}$$