1106-VR-1190 **Weam M. Al-Tameemi*** (weam.altameemi@tamiu.edu), 5201 University Blvd., LBV 312, Laredo, TX 78041, and **Robert R. Kallman** (kallman@unt.edu), Denton, TX 76203. *The Natural Semidirect product $R^n \rtimes G(n)$ is an Algebraically Determined Polish Group.*

Let G be a Polish group. G is algebraically determined Polish group if given any Polish group L and an algebraic isomorphism $\varphi : L \mapsto G$, then φ is a topological isomorphism. Let N and H be two Polish groups and let $\theta : H \to Aut(N)$ be a group homomorphism that satisfies $N \times H \to N$, $(n, h) \to \theta_h(n)$ is continuous. Then $N \rtimes_\theta H$ is a Polish group in the product topology. Let L be a Polish group and let $\varphi : L \to N \rtimes_\theta H$ be a group isomorphism. If $\varphi^{-1}(N)$ and $\varphi^{-1}(H)$ are both analytic subgroups of L, then both $\varphi^{-1}(N)$ and $\varphi^{-1}(H)$ are closed subgroups of L. Next, if $\varphi|_{\varphi^{-1}(N)} : \varphi^{-1}(N) \to N$ is measurable with respect to $BP(\varphi^{-1}(N))$, then $\varphi|_{\varphi^{-1}(N)}$ is a topological isomorphism. Furthermore, if, in addition, θ is injective, then $\varphi|_{\varphi^{-1}(H)} : \varphi^{-1}(H) \to H$ is a topological isomorphism. Finally, under all of these conditions, $\varphi : L \to N \rtimes_\theta H$ is a topological isomorphism and thus $N \rtimes_\theta H$ is an algebraically determined Polish group. Now we will apply the above theorem on the natural semidirect product $R^n \rtimes G(n)$. (Received September 11, 2014)