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We consider real analytic involutive structures  $\mathbb{L}$ , of co-rank one, defined on a real analytic paracompact orientable manifold  $M$ . To each such structure we associate certain connected subsets of  $M$  which we call the components of  $\mathbb{L}$ . Assuming that these sets are locally connected we prove that analytic regularity propagates along them. With a further assumption on the components of  $\mathbb{L}$  we characterize the globally analytic hypoelliptic structures. (Received February 02, 2006)