The Arens multiplication in a unital f-ring

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The Dedekind complete abelian ℓ-group of all order bounded group homomorphisms from an abelian ℓ-group G to the ℓ-group $\mathbb{R}$ of all real numbers is denoted by $G^{\tilde{}}$. Let R be a unital f-ring and let $R^{\tilde{}\tilde{}}$ indicate the Dedekind complete abelian ℓ-group of all group homomorphisms from $R^{\tilde{}}$ to $\mathbb{R}$. In this talk, we show that $R^{\tilde{}\tilde{}}$ is a commutative unital f-ring with respect to the so-called Arens multiplication. This work is part of joint research with Jamel Jaber.