Weak topology on a topological vector space

Let X be a k-vector space and $V \leq X^*$ be a vector space of separating linear functionals on X. Then the V-topology $\mathfrak{T}_V$ makes X into a locally convex space such that

$$X^\star \cong V$$

Definition. **Weak topology on a topological vector space**

Let $(X, \mathfrak{T}_X)$ be a topological vector space whose dual $(X, \mathfrak{T}_X)^*$ separates points on X. Then the $X^\star$-topology on X is the **weak topology** on X.