Crossed products of Hilbert pro-$C^*$-bimodules and associated pro-$C^*$-algebras

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ABSTRACT.

An action $(\gamma, \alpha)$ of a locally compact group $G$ on a Hilbert pro-$C^*$-bimodule $(X, A)$ induces an action $\gamma \times \alpha$ of $G$ on $A \times_X Z$ the crossed product of $A$ by $X$. We show that if $(\gamma, \alpha)$ is an inverse limit action, then the crossed product of $A \times \alpha$ by $X \times \alpha$ respectively of $A \times \alpha, r$ by $X \times \gamma, r$ $G$ is isomorphic to the full crossed product of $A \times_X Z$ by $\gamma \times \alpha$ respectively the reduced crossed product of $A \times_X Z$ by $\gamma \times \alpha$.

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