

## P2 Demo: Merging Models Across Coalition Edge Devices using Generative Policy

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Scope: Demonstrating how generative policies can be used to merge machine learning models with coalition partners

Description: In this demonstration, we will show how models can be shared across coalitions to create a combined merged model. Access to the coalition models is controlled by policies which can be modified automatically in a dynamic coalition environment. Generative policies are used to relax or restrict access to models and model parameters based on changing contextual conditions.

For this demonstration, we will show how trained acoustic models can be merged across mobile devices operated by coalition partners. In one scenario, the UK has an acoustic sensor with a model that has been trained to detect sound anomalies such as enemy aircraft noise. The UK shares their model parameters with the US dataset in order to fine tune their existing model and improve accuracy and detect a wider range of sounds. In another scenario, US policies may reject model merging with other partners, such as Kish. In this case, the generative policies may contain spatial-temporal attributes which are automatically discovered in the environment. These attributes will change depending on the contextual information, so that in certain conditions the policies will be generated automatically to allow the model merging with Kish.

