

	Aibo1	Aibo2
Boot	create erouter instance	create erouter instance
Setup	<div> <div>new EventRouter instance created ('remoteRtr'), connected to Aibo2</div> <div>⋮</div> <div>Behavior ('beh') registers for (buttonEGID, HeadButOffset, activateETID) on remoteRtr</div> <div>↓</div> <div>remoteRtr sends (erouterEGID, buttonEGID, activateETID) (signals first listener for buttonEGID</div> </div> <div> <div>→</div> <div>create new EventListener ('listen1'), receives network data from Aibo1, but events from Aibo2:erouter</div> <div>⋮</div> <div>(1) listen1 subscribes to buttonEGID(2) from erouter</div> </div>	
Usage	<div> <div>remoteRtr gets button event, sets host field to Aibo2</div> <div>↓</div> <div>beh receives⁽³⁾ Aibo2's button event</div> </div> <div> <div><i>button gets pressed</i></div> <div>↓</div> <div>listen1 serializes⁽³⁾ event, sends over network</div> <div>←</div> </div>	
Teardown	<div> <div>beh is destructed, unsubscribes from remoteRtr</div> <div>↓</div> <div>remoteRtr generates (erouterEGID, buttonEGID, deactivateETID)</div> <div>⋮</div> <div>remoteRtr is destructed, closes connection to Aibo2</div> </div> <div> <div>→</div> <div>listen1 unsubscribes for button events from erouter</div> <div>⋮</div> <div>listen1 destructed, unsubscribes any remainder from erouter</div> </div>	

¹Could be done either by making `remoteRtr` a subclass of `EventRouter` which is network-aware, or by instantiating an `EventListener` which subscribes to `remoteRtr`'s `erouterEGID`, so each time listeners are added or removed this separate class would handle the appropriate network communications. The former implementation has simpler information flow, but will require you to learn some `EventRouter` internals. The latter might be a little easier to implement, (especially given footnote 3), but is perhaps a little less elegant. (debatable)

²Note that with a basic implementation, although `beh` only wants head button events, `listen1` is subscribing to *all* button events. `remoteRtr` would filter the extra, so `beh` will only get what it expects, but the dropped events are wasting bandwidth and possibly CPU on Aibo2. A more advanced implementation of this process would not just send the `erouterEGID` event directly, but also send the level of specificity that is being subscribed so that `listen1`'s subscriptions directly match `beh` (plus any other behaviors accessing `remoteRtr`). This could be done by either using a new `EventBase` subclass for `erouterEGID` events to hold the addition information, (and then using the basic implementation for serialization), or by using a custom protocol for communication between `remoteRtr` and `listen1`.

³To handle events serialization/deserialization polymorphically, the `EventTranslator` (`Events/EventTranslator.{h,cc}`) class has been provided, which implements `encodeEvent()` and `decodeEvent()`. `EventTranslator` is itself an `EventListener`, automatically calling `encodeEvent` for any events it receives. Thus, a subclass of `EventTranslator` could be created to encode and send over the network with relative ease. Alternatively, adding a static version of `encodeEvent` to `EventTranslator` (`decodeEvent` is already static) would allow an `EventRouter` subclass ('`RemoteRouter`') to call the serialization function without actually needing an `EventTranslator` instance.