

## NIJ's Technology Development Process

Have you ever wondered how a technology or tool goes from inside someone's head to the street? It's a long process that can have many steps along the way.

NIJ developed and uses the following Product Implementation Process to move from initial concept to a marketable product for its discretionary science and technology initiatives. This process is similar to the Department of Defense Research, Development, Test and Evaluation process, except the NIJ process focuses on the public safety community and its need for a faster and less expensive route from idea to market. **Figure 1** depicts a high-level view of the process.

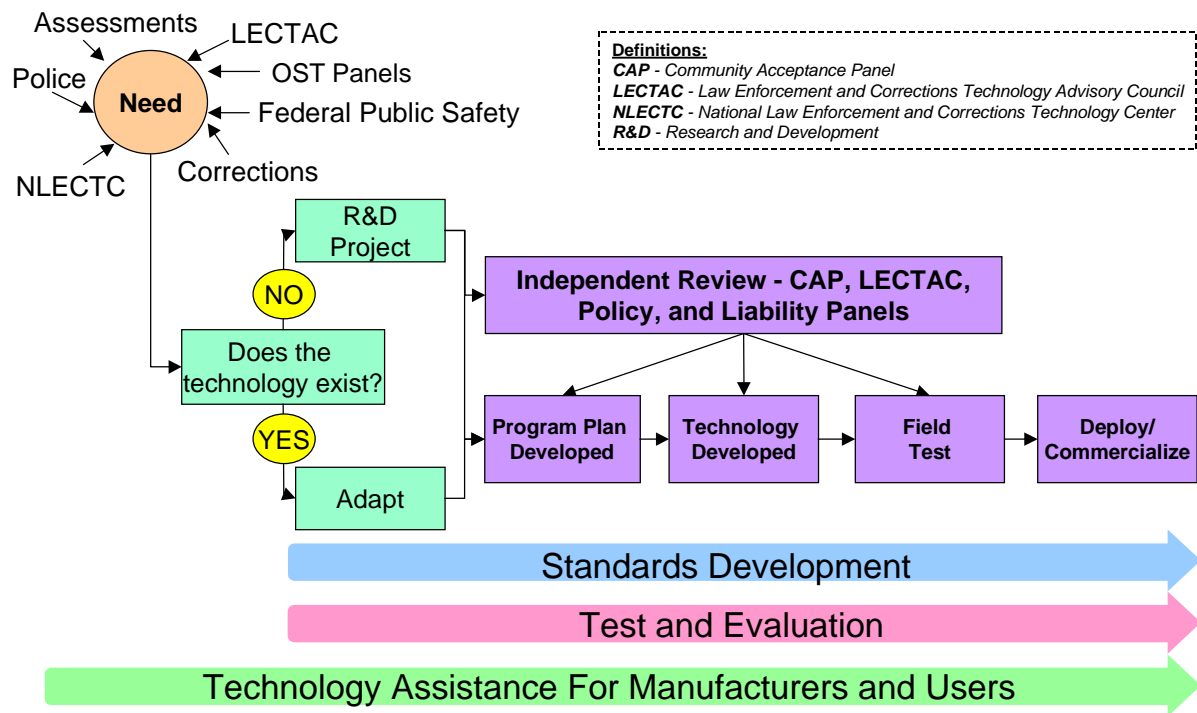
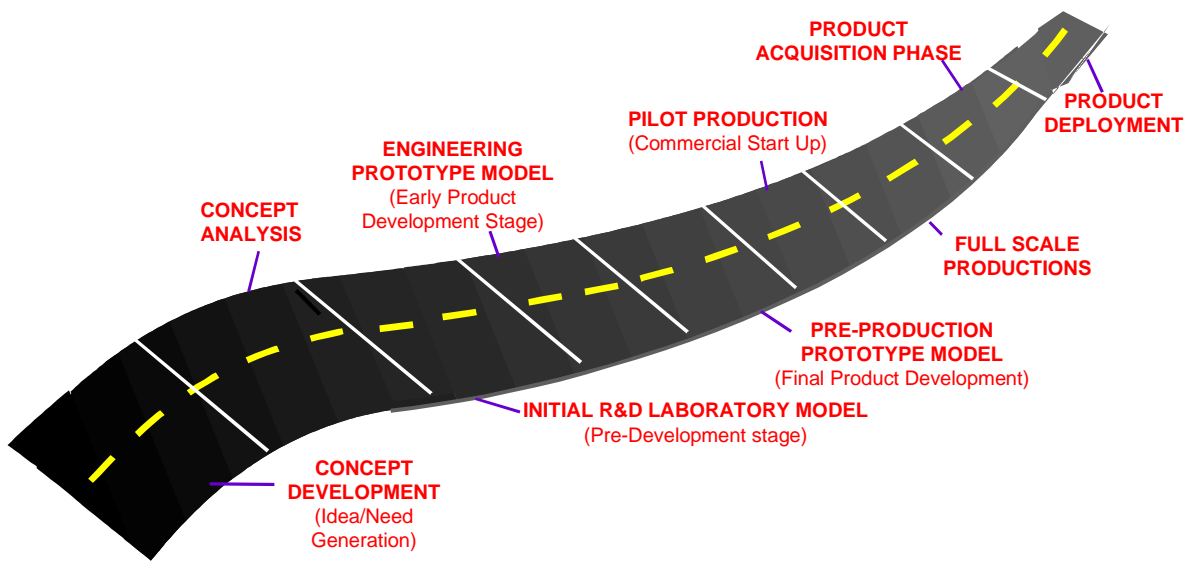


Figure 1: NIJ's Product Implementation Process

**Figure 2** depict nine major product implementation steps for the identification, development, and delivery of new technologies to the law enforcement and corrections community. The actions that take place during each step, as well as a discussion of the decision points inherent in each step, follows the graphic.

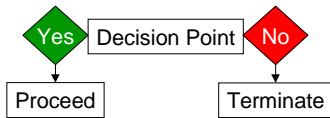
NIJ is not always involved in each step with every technology. Some products are already beyond the initial when NIJ gets involved. Additionally, depending on the type of technology, some of the steps may be skipped.



**Figure 2: NIJ's Product Implementation**

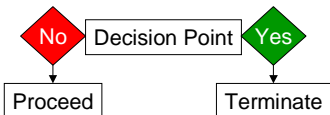
### **Step 1. Concept Development**

1. Identify and understand the problem.
2. Can the problem be addressed best by policy or technology?
3. Should the problem be addressed by NIJ or another agency?
4. Is the operational concept or need supported by LECTAC?
5. Review concept for development potential.



- Decision Point – Is concept appropriate for NIJ to develop?

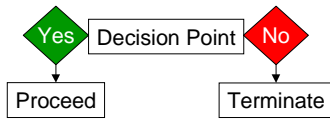
### **Step 2. Concept Analysis**



- Decision Point – Does solution already exist as either commercial- or government off-the-shelf?

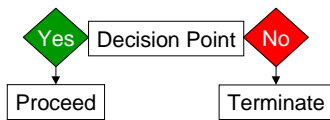
1. Identify and prioritize conceptual idea of solution options.
2. Liability Panel conducts initial product concept review.

- Appropriate user groups provide operational context comments.
- Prepare initial product market assessment and evaluation.



- Decision Point – Does sufficient user support exist to justify continued development?*

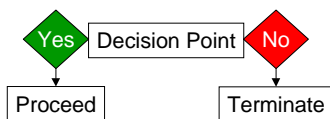
- Prepare initial product implementation (commercialization) assessment.
- Define unique operational needs and constraints.
- Develop initial product design definition.
- Complete preparation of product “concept formulation (CF)” plan.
- Project goes to NIJ Director for funding.



- Decision Point – Is the project appropriate for NIJ to continue development?*

**Step 3. Initial Research and Development Laboratory Model** - (Pre-Development Stage)

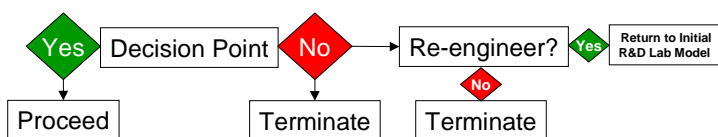
- Provides funding to lead developer and/ or NLECTC center (solicitation and/ or directed project).
- Develop breadboard (i.e., experimental model) prototype.
- Demonstrate breadboard prototype.



- Decision Point – Does demonstration provide justification to continue further technical development?*

**Step 4. Engineering Prototype Model** - (Early Product Development Stage)

- Develop and demonstrate brassboard model (i.e., a breadboard model that has undergone further engineering and development).
- Develop, demonstrate, and evaluate initial engineering prototype model.

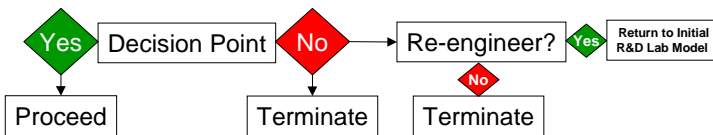


- Decision Point – Do brass-board model and initial prototype show potential for successful product*

development?

### **Step 5. Pre-Production Prototype Model** - (Final Product Development Stage)

1. Refine/ complete engineering design for pre-production prototype.
2. Conduct technical and liability test and evaluation demonstration(s).
3. Demonstrate near-commercial model to law enforcement and corrections community.
4. Evaluation by users.

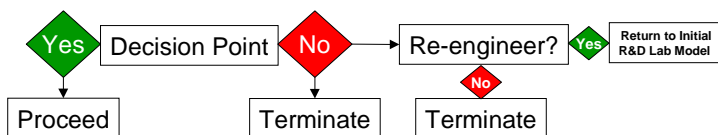


- ***Decision Point** – Does sufficient user support exist to justify continued development?*

5. Finalize product design and safety requirements.
6. Prepare formal product design documentation package once there is sufficient product development.
7. Identify manufacturer (may be government, commercial, or academic).
8. Transfer technology development and production to manufacturer(s).

### **Step 6. Pilot Production** - (Commercial Start Up)

1. Commercial market assessment and development plan by manufacturer(s).
2. Low rate initial production (LRIP) run.
3. Demonstration of latest vendor product to user community.



- ***Decision Point** – Does pilot product fulfill original need, and is there sufficient user support to justify full-scale production?*

### **Step 7. Full Scale Production** - (Commercial Market)

1. Commercial product production run for national/international sale by manufacturer.
2. Product marketing demonstrations to potential buyers.

### **Step 8. Product Acquisition Phase**

1. Product procurement by State and local law enforcement.

2. Support creative funding initiatives.
3. Encourage information dissemination through the NLECTC system.
4. Encourage consortia procurement via law enforcement community and industry partnerships.

### **Step 9. Product Deployment**

1. Acquisition and use of product.
2. User training.
3. Product maintenance and logistics support .