NIST ELFT Workshop
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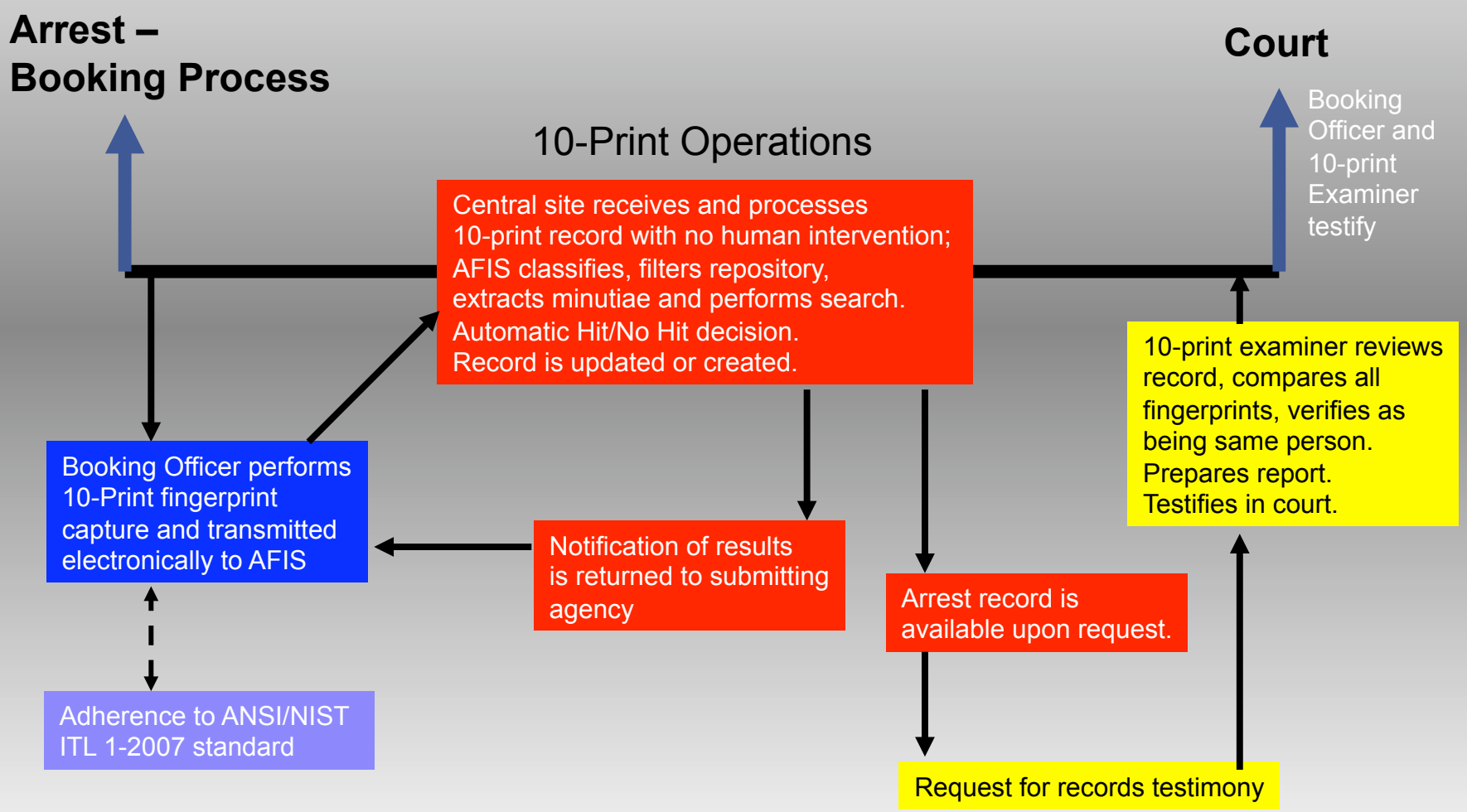
Defining AFIS Latent Print "Lights-Out"

Stephen B. Meagher
Dactyl ID, LLC

AFIS 10-Print Lights-Out

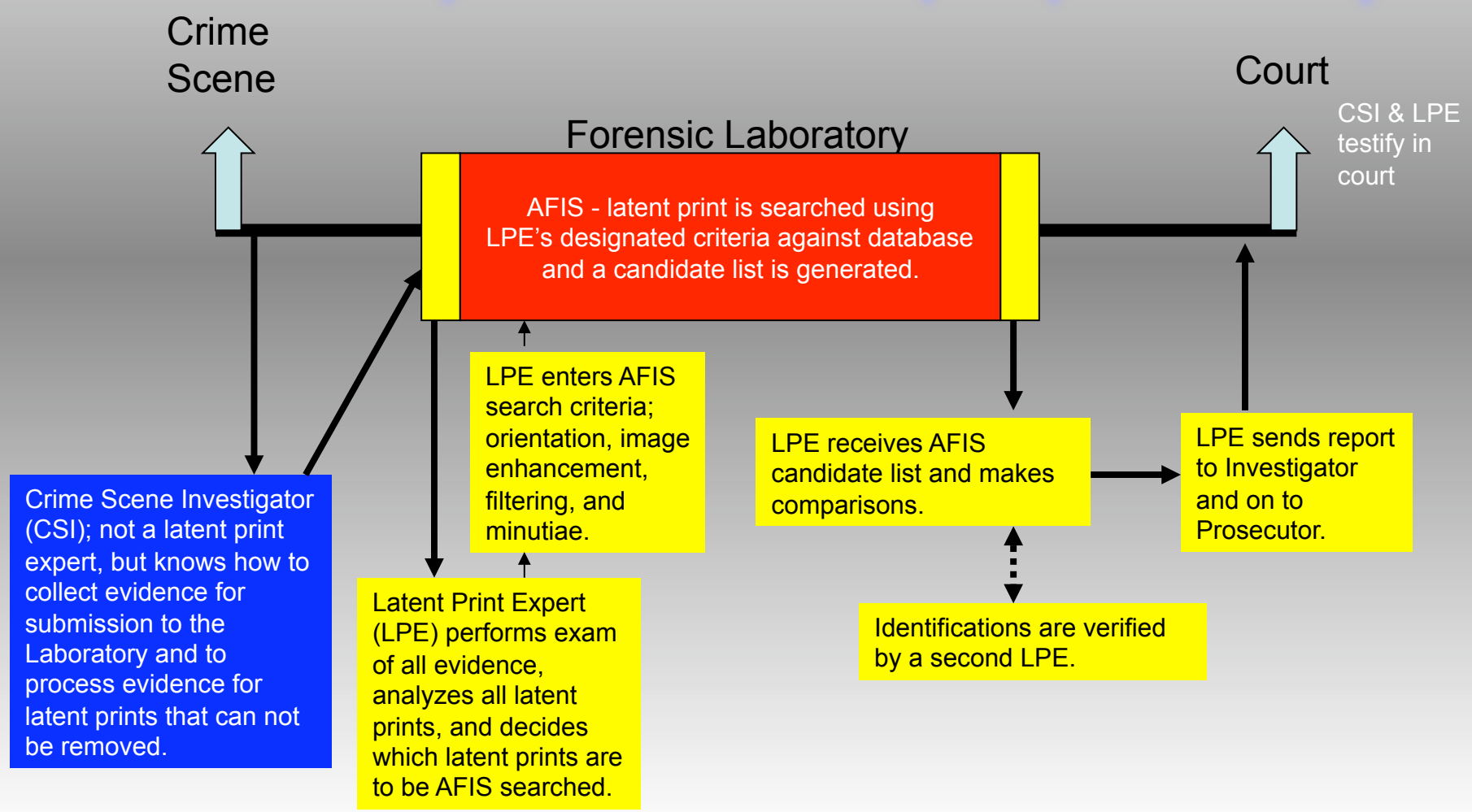


NIST ELFT Phase II Report Section 1.1, AFIS and Automated Feature Extraction and Matching

"It is important to distinguish AFEM-based latent fingerprint identification from the general concept of *lights-out identification. Lights-out* identification refers to a system requiring minimal or zero human assistance in which an image is presented as input, and the output consists of a short candidate list. For ten-print search applications, this list may be: 1) empty, 2) contain a single candidate, or rarely 3) have more than one candidate. Event (3) will occur only in cases when the matcher produces more than one candidate with a significant computed probability of being a true mate. *Lights-out* matchers are currently in operation for rolled fingerprint search systems, and are emerging for plain impressions. Latent fingerprints are much more difficult, and no *lights-out* matchers are currently in operational service. Furthermore, the *ELFT07 Concept of Operations (CONOPS)* asserts that a fully *lights-out* latent fingerprint matching capability represents too large of a single step from current practices."

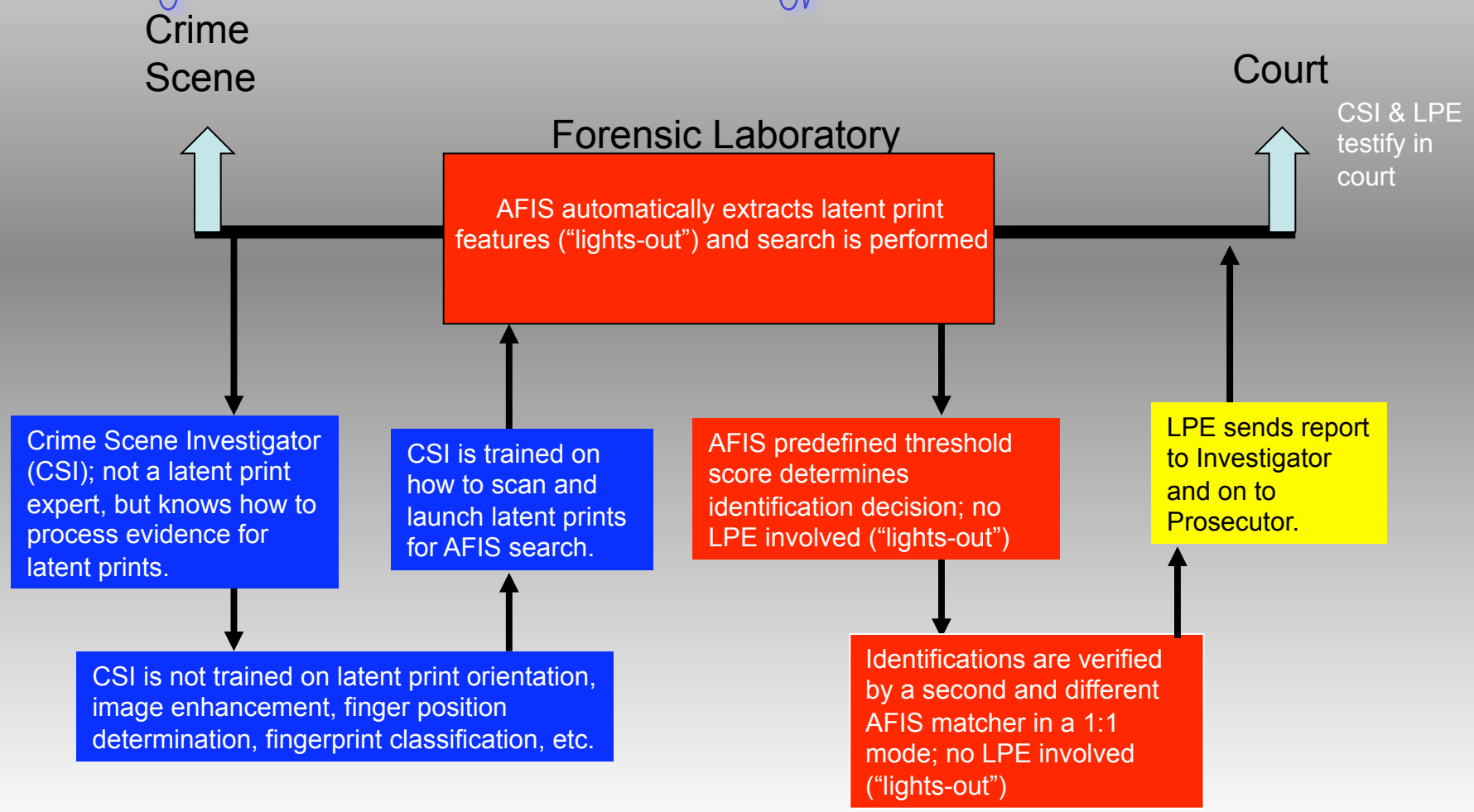
Scenario 1

General description of AFIS latent print process today.



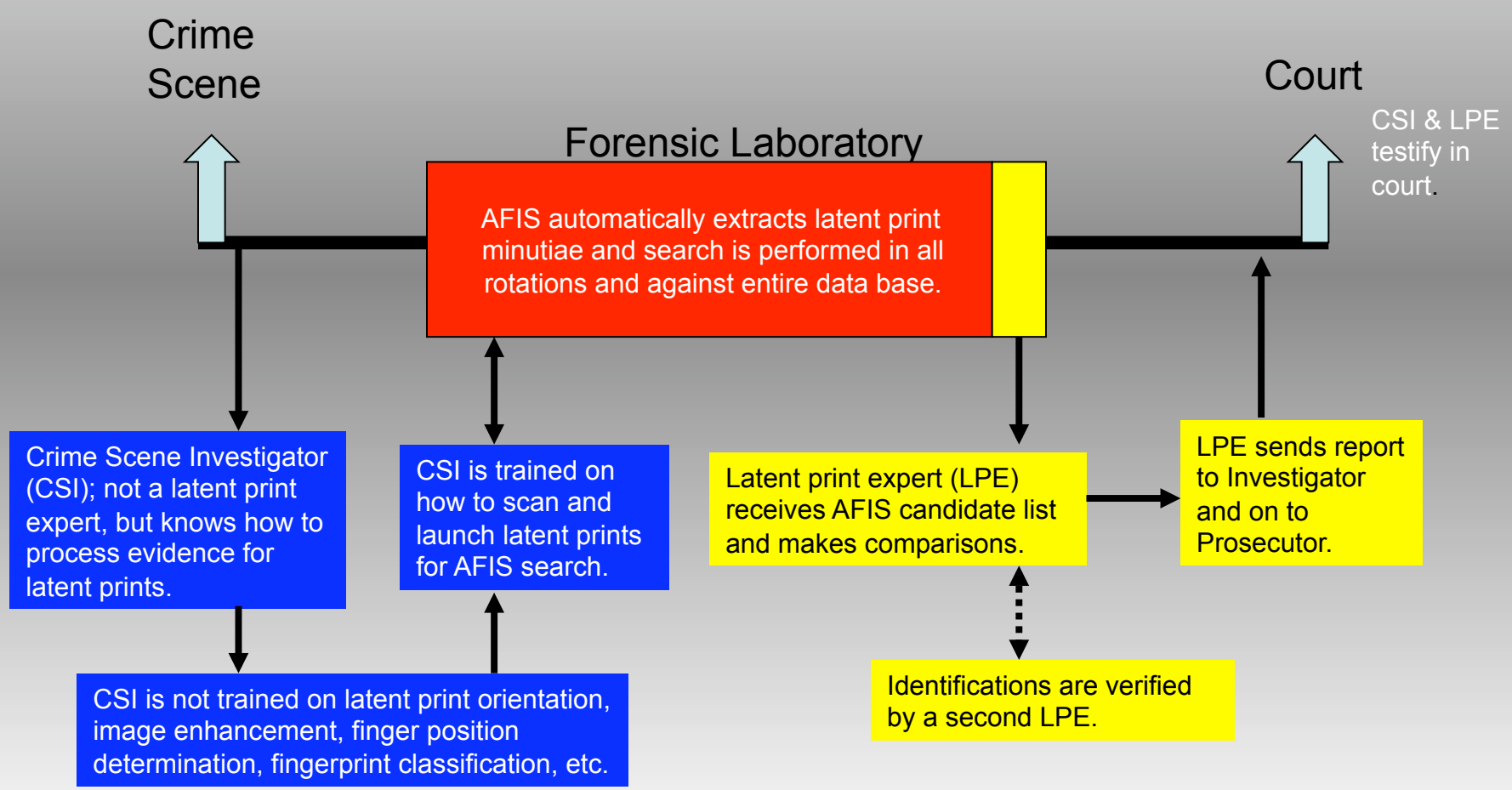
Scenario 2

AFIS "Lights-Out" Latent Print Searching, Identification and Verification



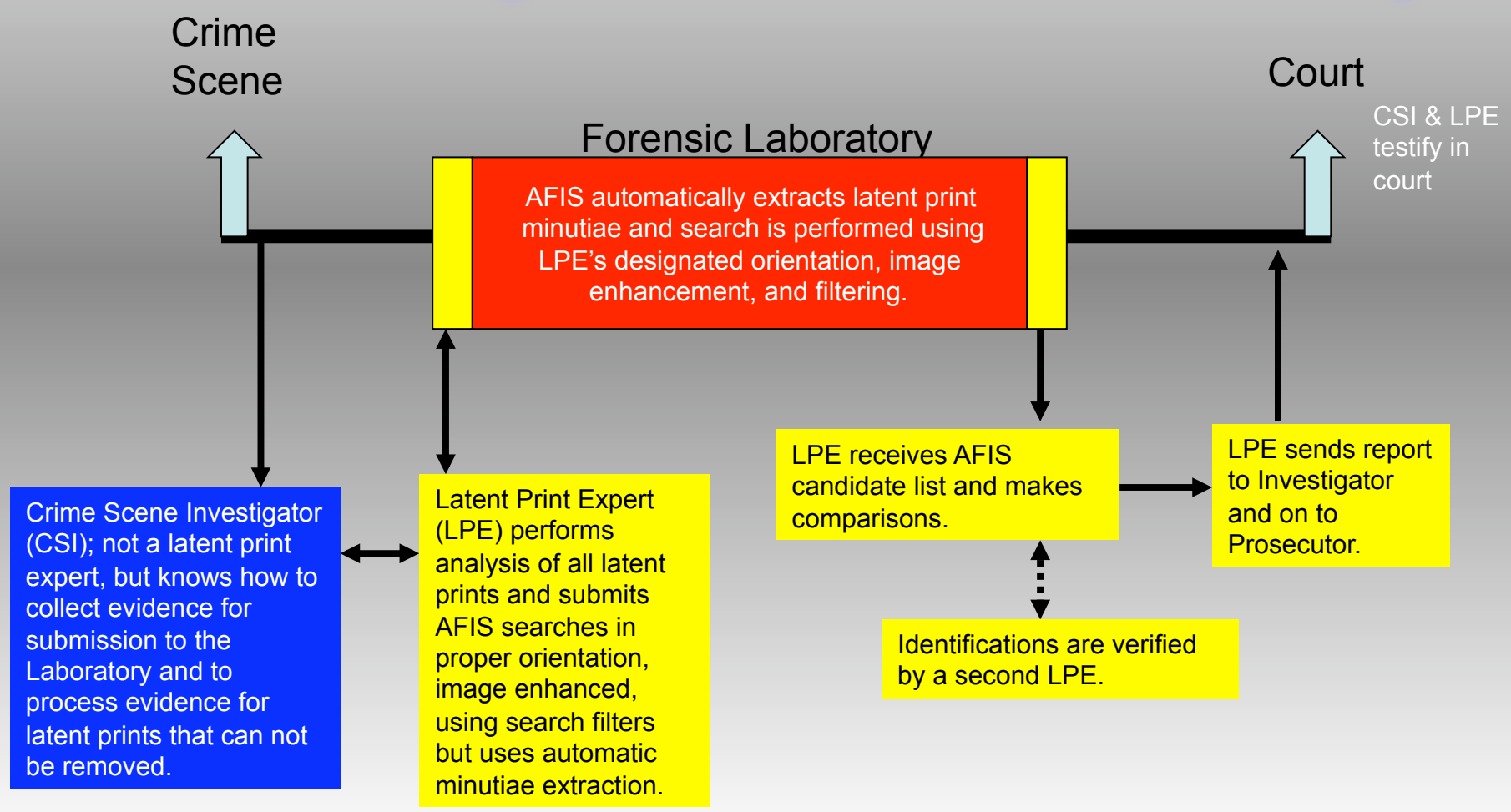
Scenario 3

AFIS "Lights-Out" Latent Print Searching



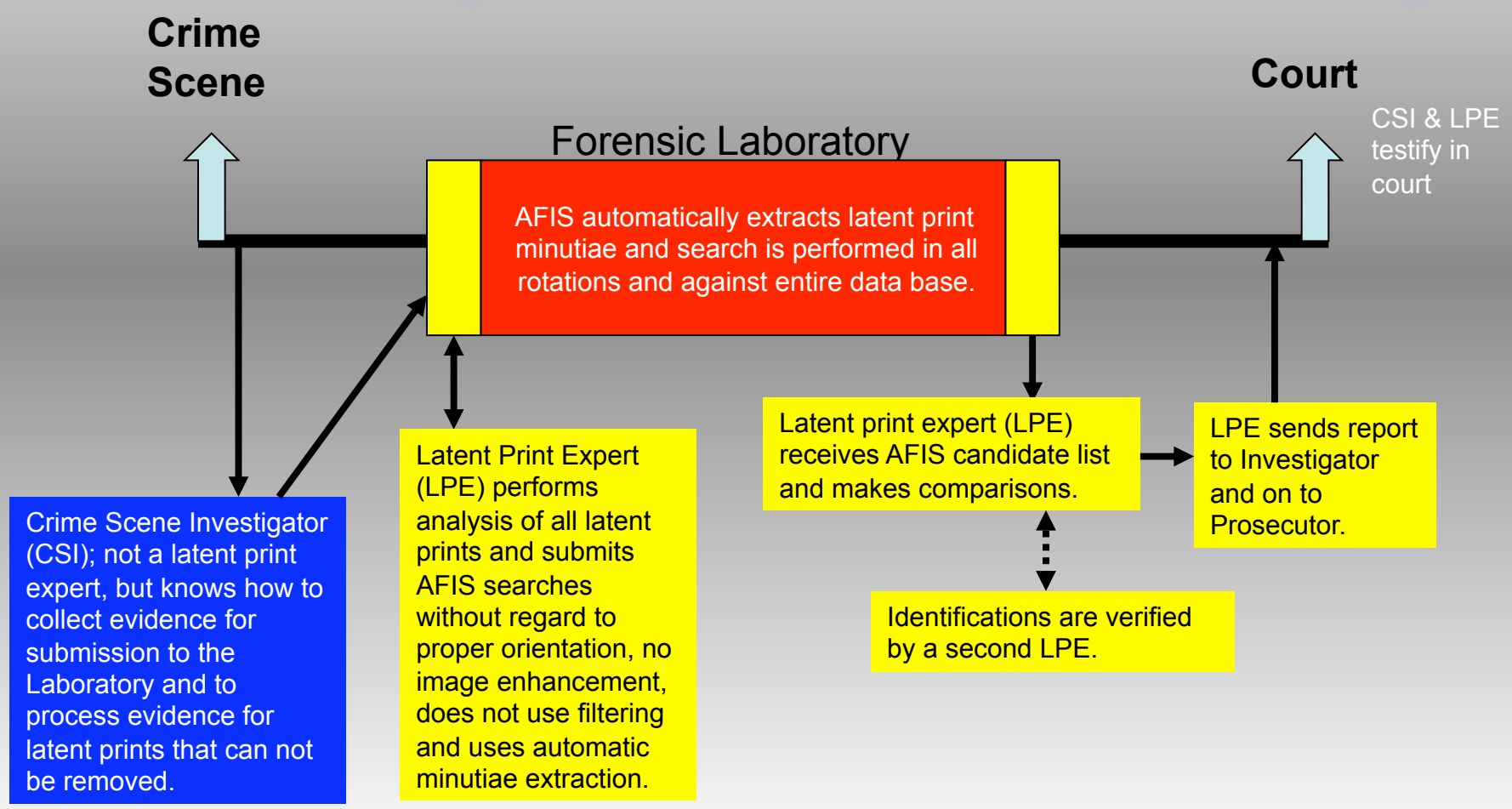
Scenario 4

AFIS "Semi Lights-Out" Latent Print Searching



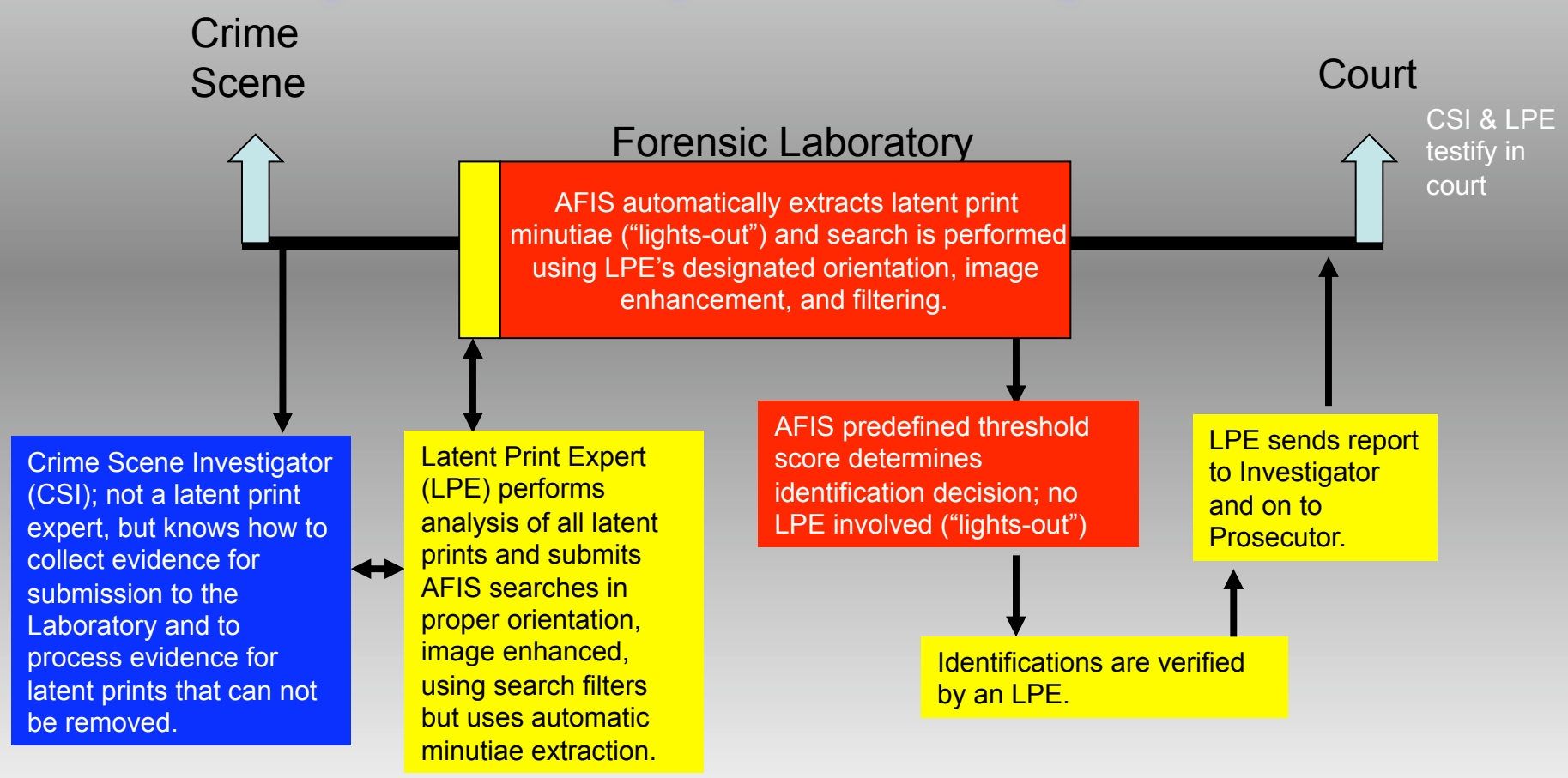
Scenario 5

AFIS "Semi Lights-Out" Latent Print Searching



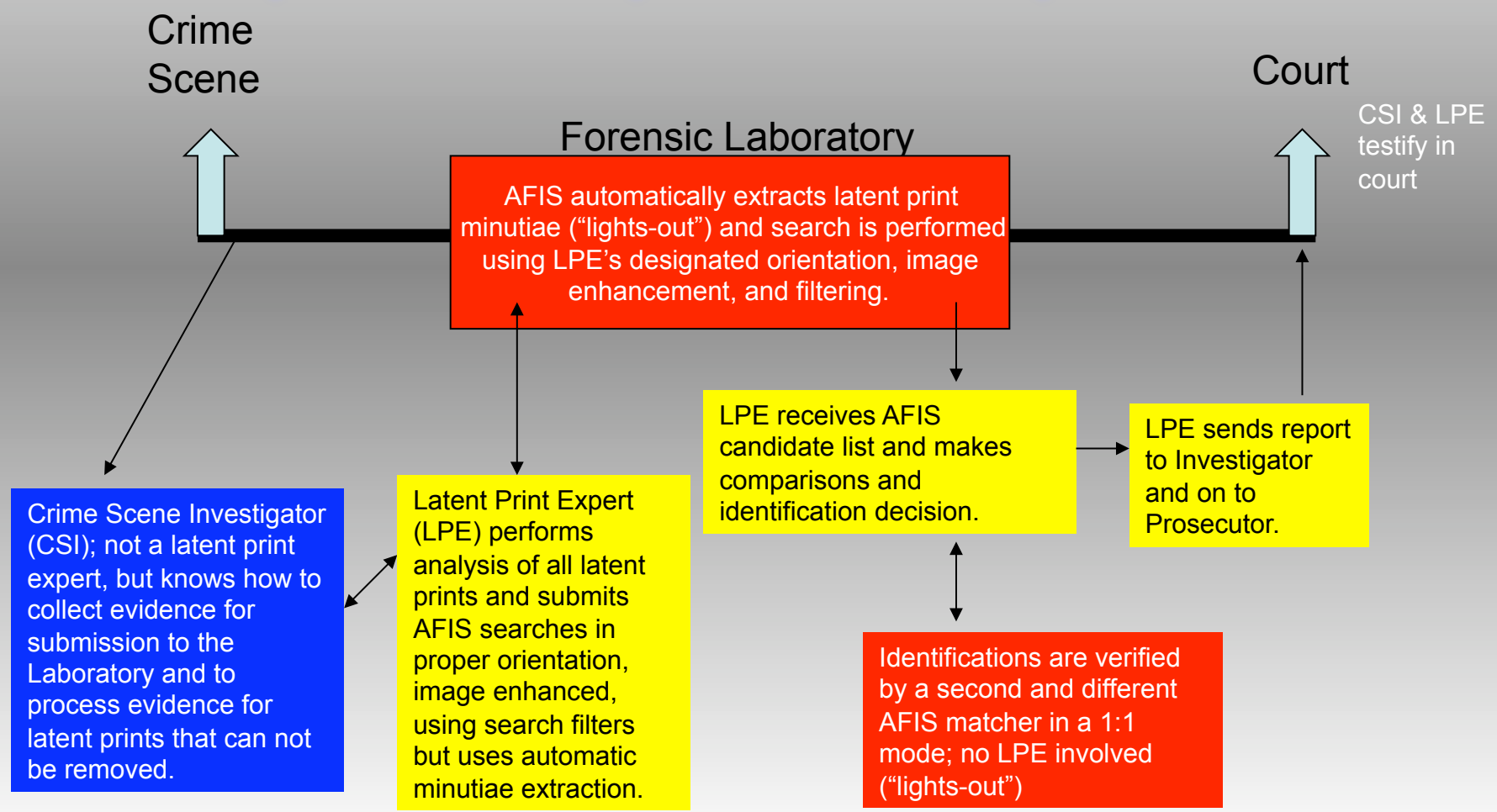
Scenario 6

AFIS "Semi Lights-Out" Searching and Latent Print "Lights-Out" Identification



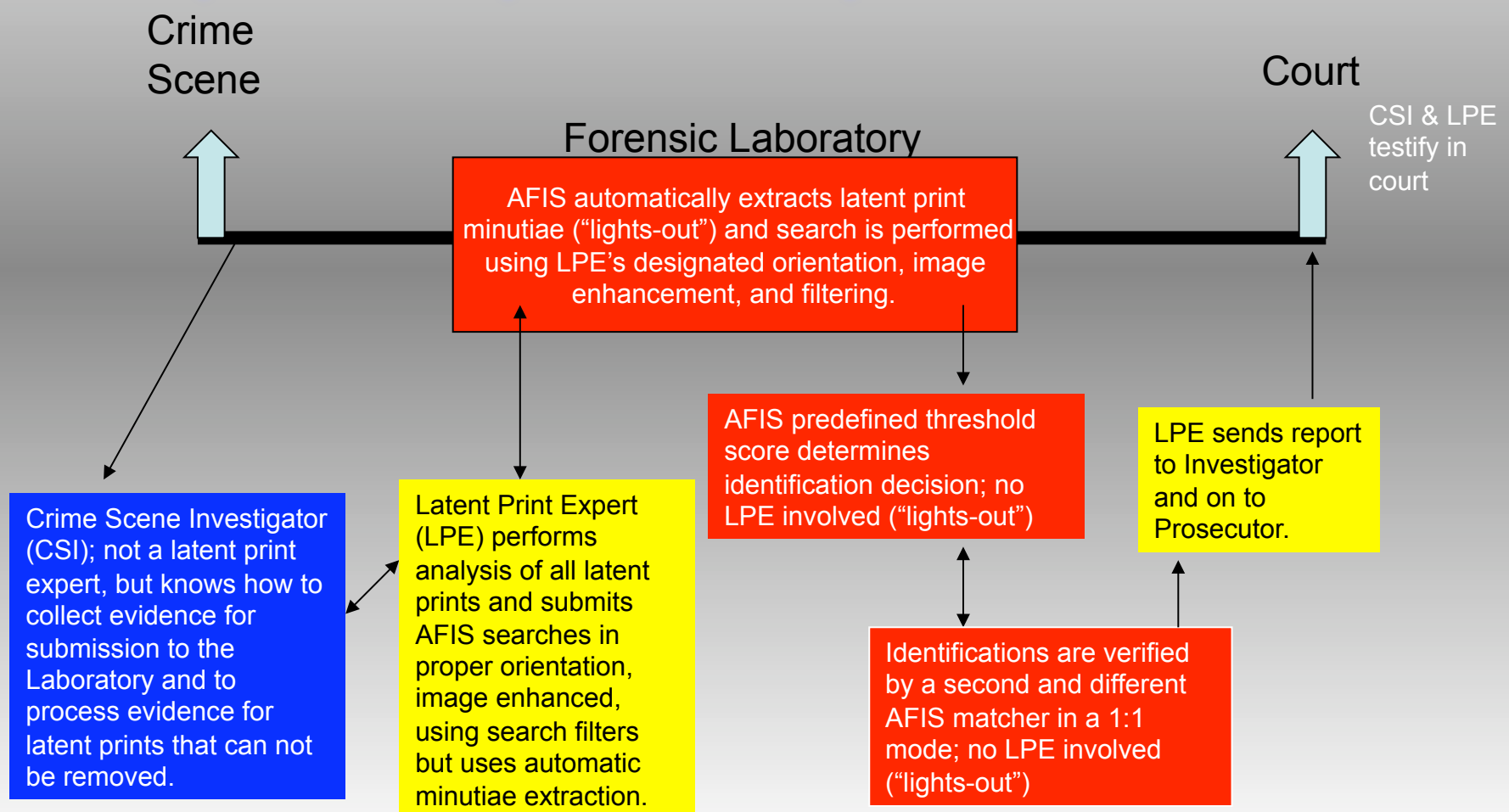
Scenario 7

AFIS "Semi Lights-Out" Searching and Latent Print "Lights-Out" Verification



Scenario 8

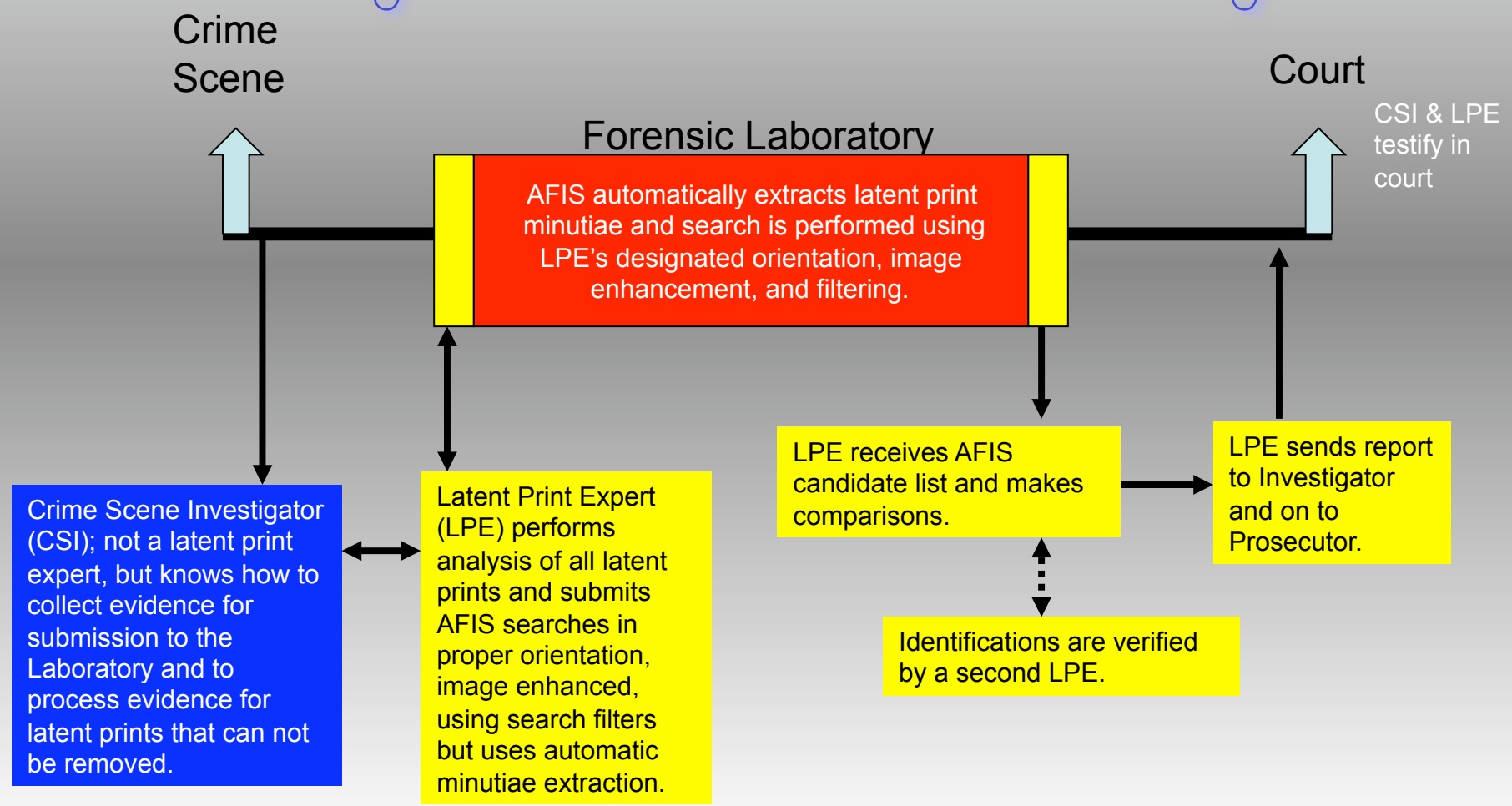
AFIS "Semi Lights-Out" Searching and Latent Print "Lights-Out" Identification and Verification



Which scenario is the ELFT Phase II test?

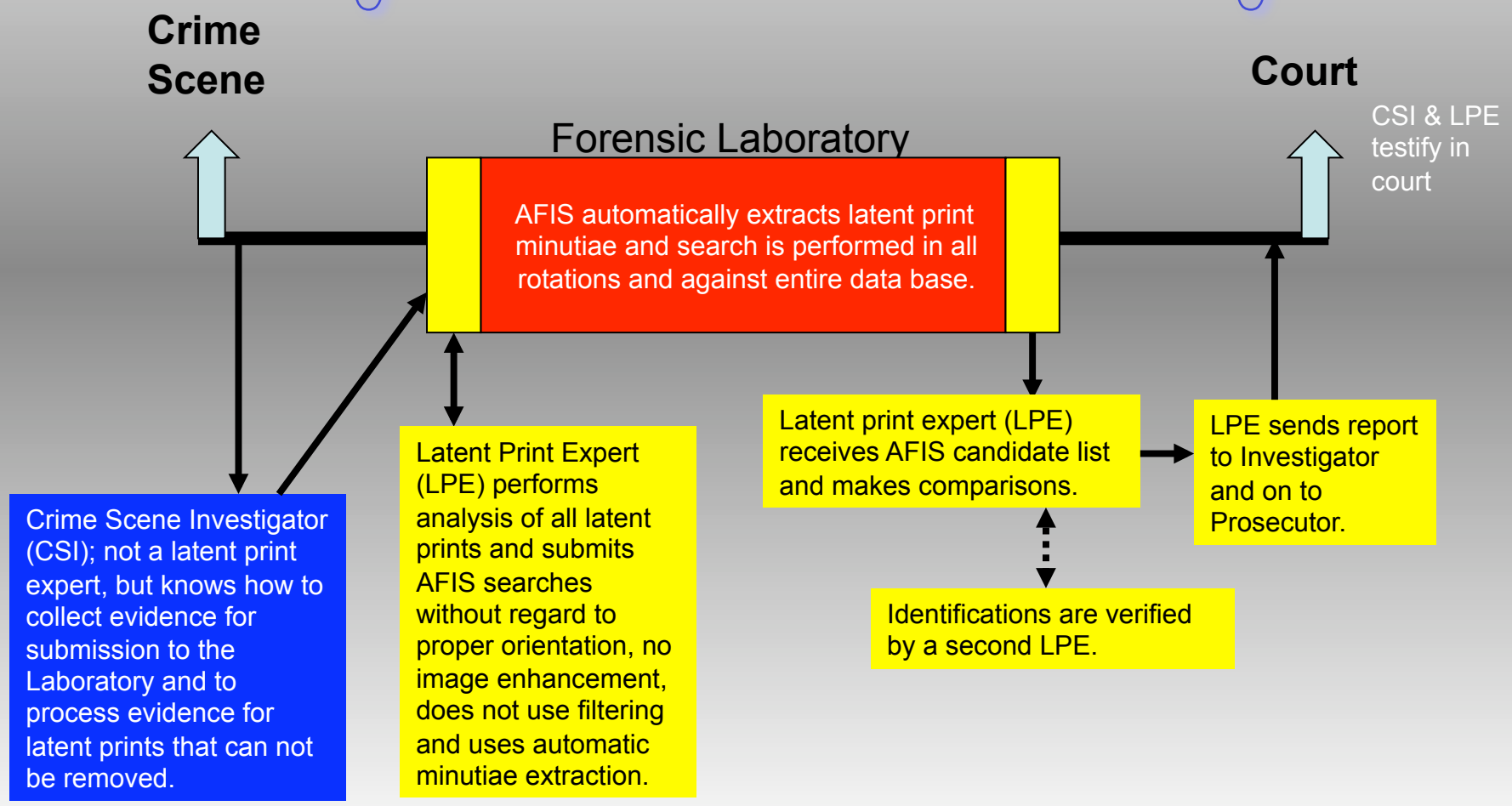
Scenario 4

AFIS "Semi Lights-Out" Latent Print Searching - AFEM



Scenario 5

AFIS "Semi Lights-Out" Latent Print Searching - AFEM



What is the demand for each scenario?

Where is the market now? Future?

What needs to be tested next?