



TEXAS A&M UNIVERSITY

Internet2 Technology
Evaluation Center

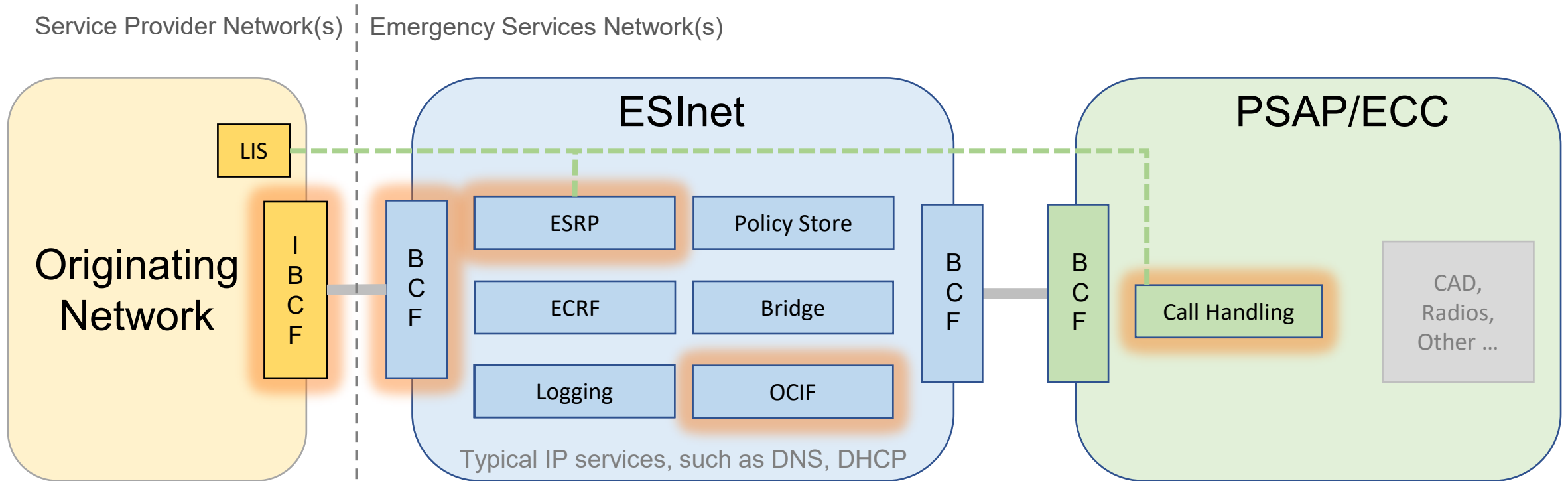
STIR/SHAKEN for NG9-1-1 A (very) Brief Introduction

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NG9-1-1 Architecture: “Functional Elements”



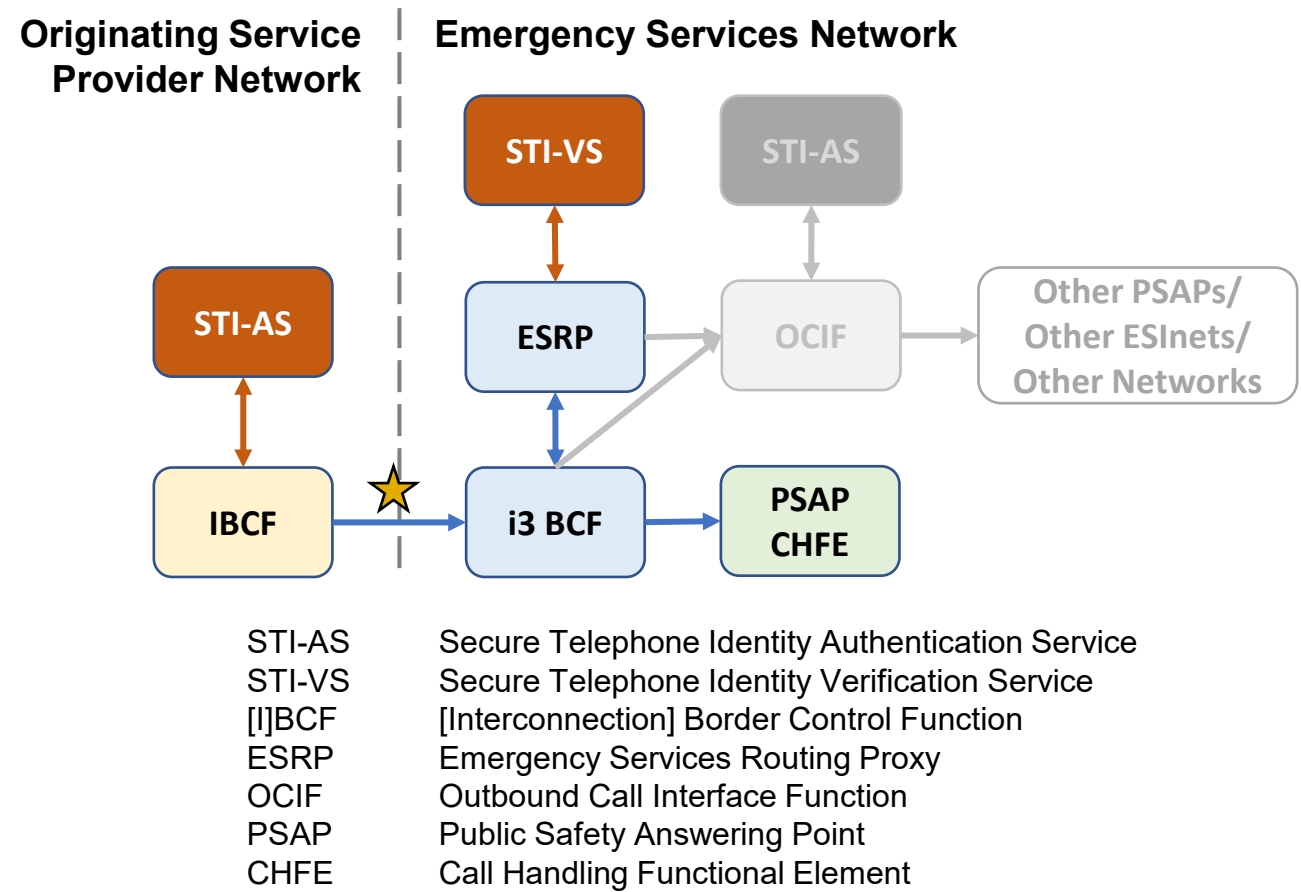
LIS = Location Information Server
 IBCF = Interconnecting Border Control Function

ESInet = Emergency Services IP Network
 BCF = Border Control Function
 ESRP = Emergency Services Routing Proxy
 ECRF = Emergency Call Routing Function
 OCIF = Outbound Call Interface Function

PSAP = Public Safety Answering Point
 ECC = Emergency Communications Center
 CAD = Computer Aided Dispatch

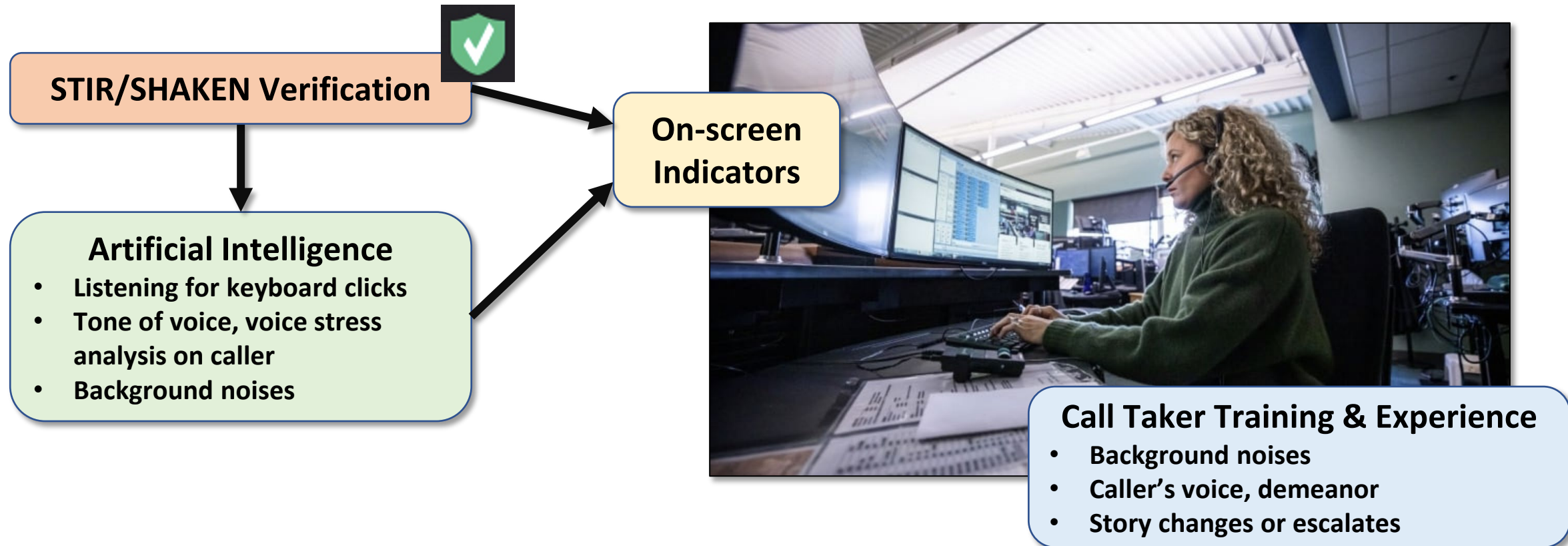
STIR/SHAKEN for INbound NG9-1-1 Calls

- Originating service provider performs Authentication function prior to sending call to ESInet
 - Full PASSporT info is passed with call to ESInet★
- ESRP performs Verification function
- ESRP performs call processing (location-, policy-based routing)
- ESRP sends call to the appropriate PSAP with “verstat” information



Is This Incoming Call Real?

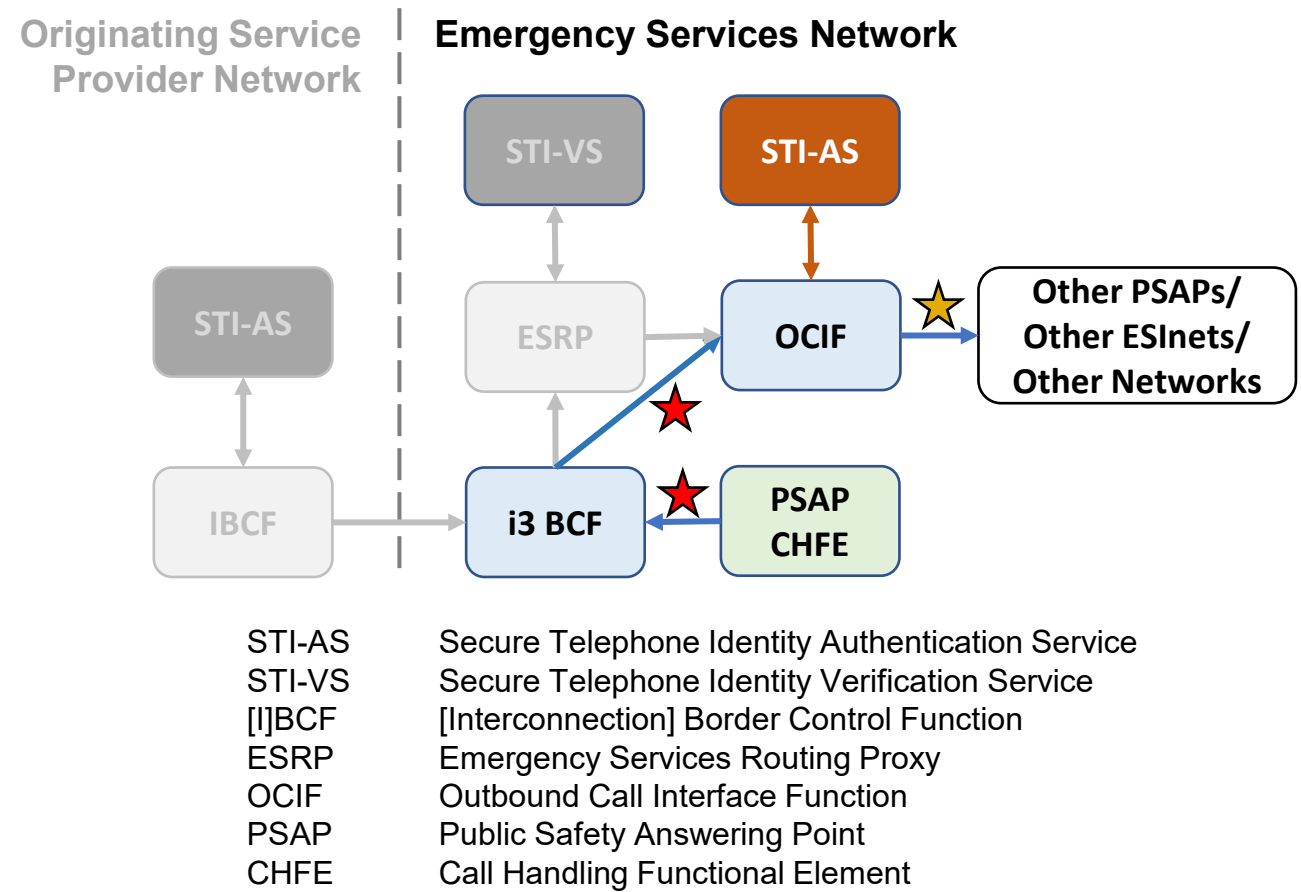
STIR/SHAKEN and other tools can help with decision making



STIR/SHAKEN for OUTbound NG9-1-1 Calls

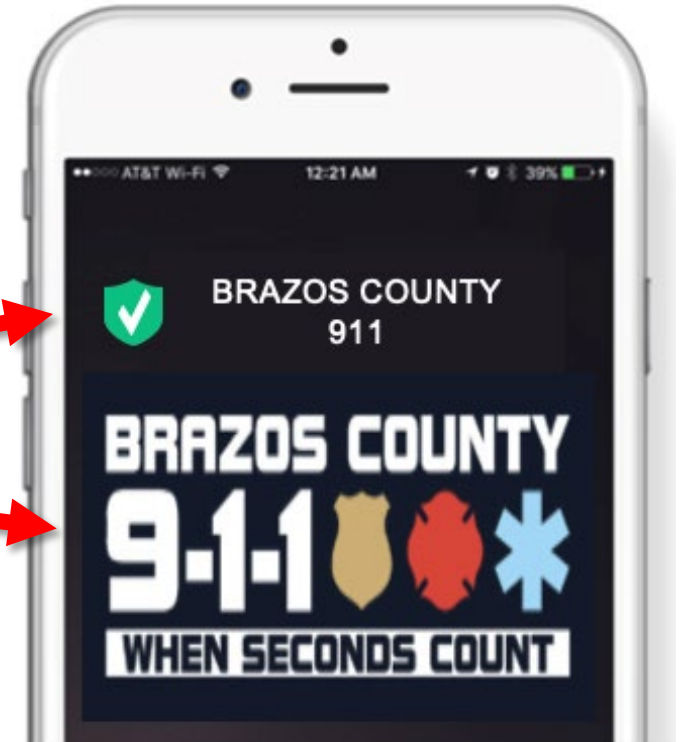
(Example: Callbacks, Follow-ups, Transfers)

- PSAP initiates outbound call
 - Draft: PASSporT info is included ★
- OCIF invokes the STI-AS after call processing is completed (after interconnected network has been determined)
- OCIF sends the call toward the destination
 - Full S/S PASSporT info is included ★
- Can also include Rich Call Data



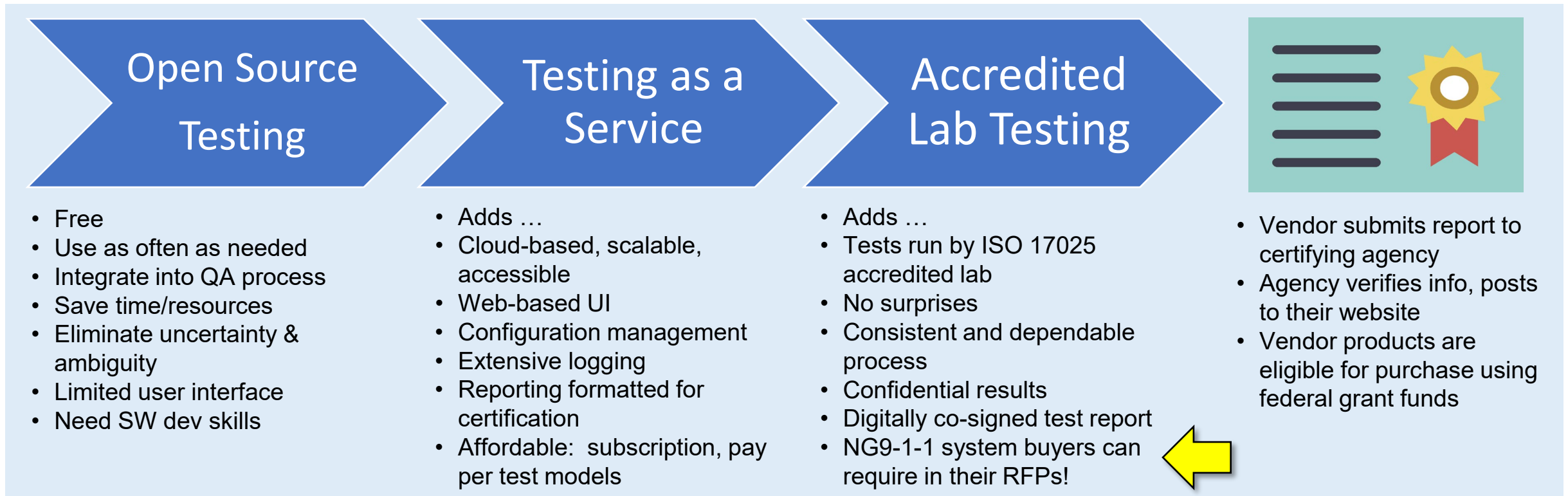
Will My Outbound Call Be Answered?

- Transfers to other PSAP/ECCs
- Callbacks and follow-ups to the RP
 - They may be in distress; disinclined to be interrupted
- Call Handling FE can show identity
 - STIR/SHAKEN verification of authenticity
 - Rich Call Data helps called party decide quickly
 - Neustar calls this “Branded Call Display”
- Or, privacy can be invoked, if desired



Will My NG9-1-1 System Do This?

- **DHS** is funding efforts in **NG9-1-1 Interoperability Testing** and **Cybersecurity Testing**
- **Texas A&M University** is building the test system to verify that NG9-1-1 components conform to the standards (incl. S/S), are interoperable with each other, and are secure



STIR/SHAKEN and NG9-1-1

- STIR/SHAKEN is a key requirement in the NG9-1-1 standard
- Helps to identify legitimate vs. spoofed calls
- Inbound calls: helps call takers decide how to handle the call
- Outbound calls: increases likelihood of calls being answered



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