

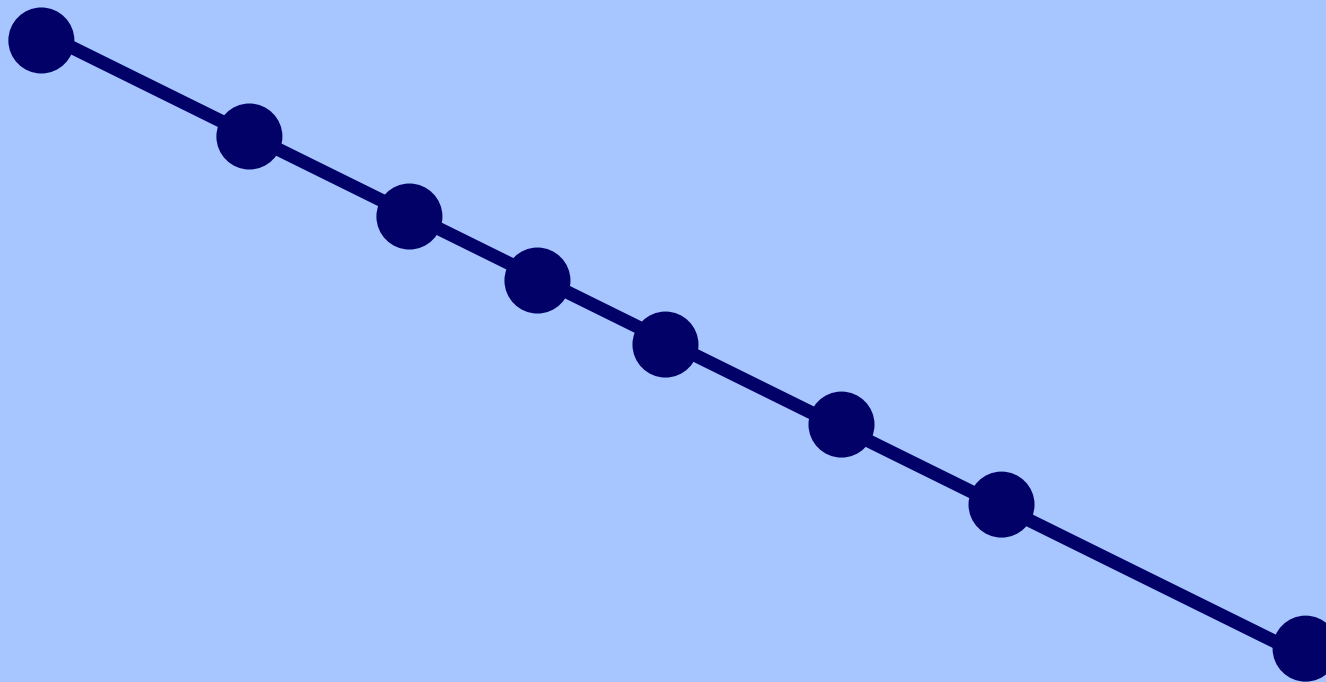
Implementation Of 2002-1: Lame Delegations

Ed Lewis
Research Engineer
ARIN

Background

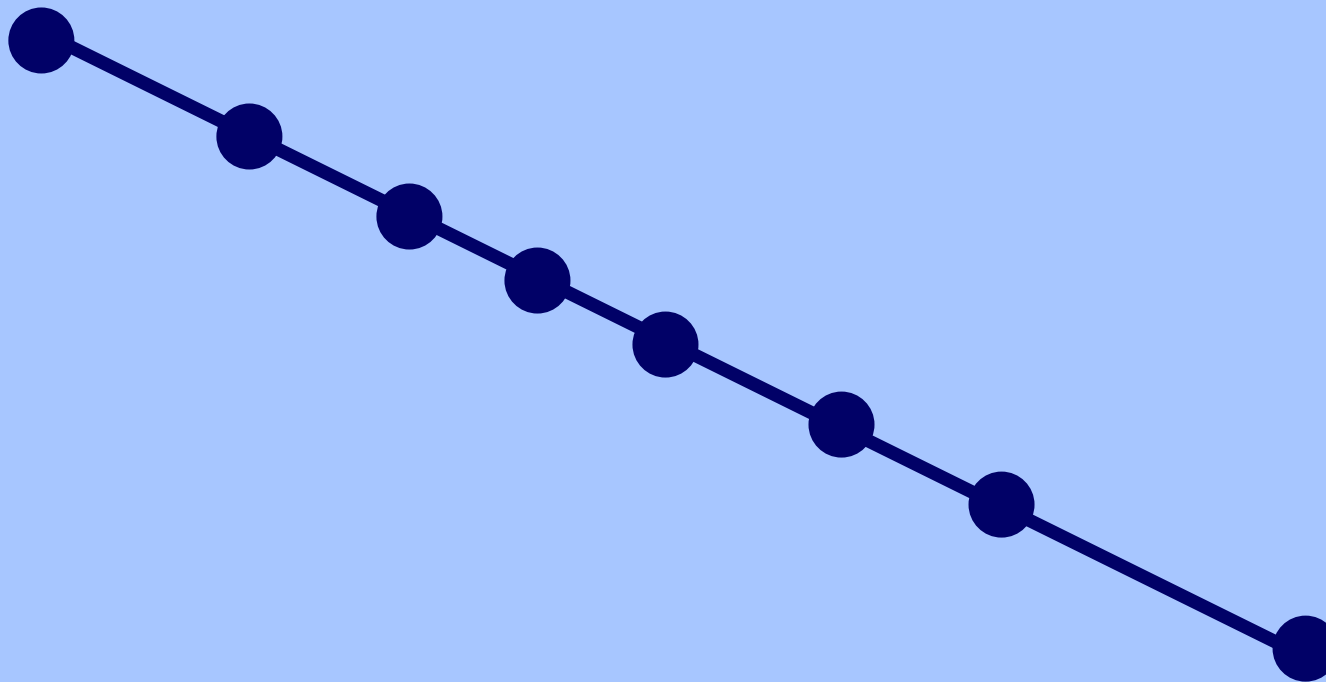
- * MAR 2002 – Policy formally proposed
- * APR 2002 – ARIN IX
- * JUN 2002 – Measure extent of problem
- * Further discussion on email lists
- * OCT 2002 – ARIN X
- * NOV 2002 – Policy adopted
- * DEC 2002 – Implementation activity begins

Policy Summary



Policy Summary

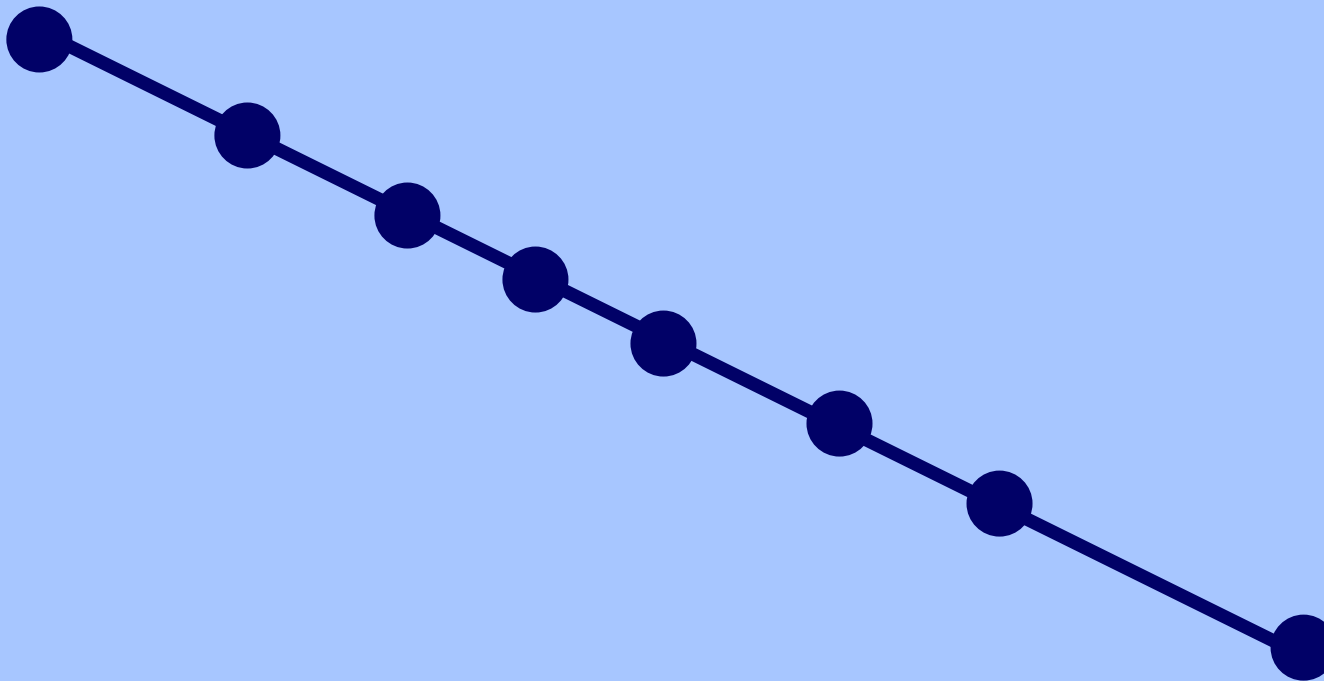
Four Phases



Policy Summary

Four Phases

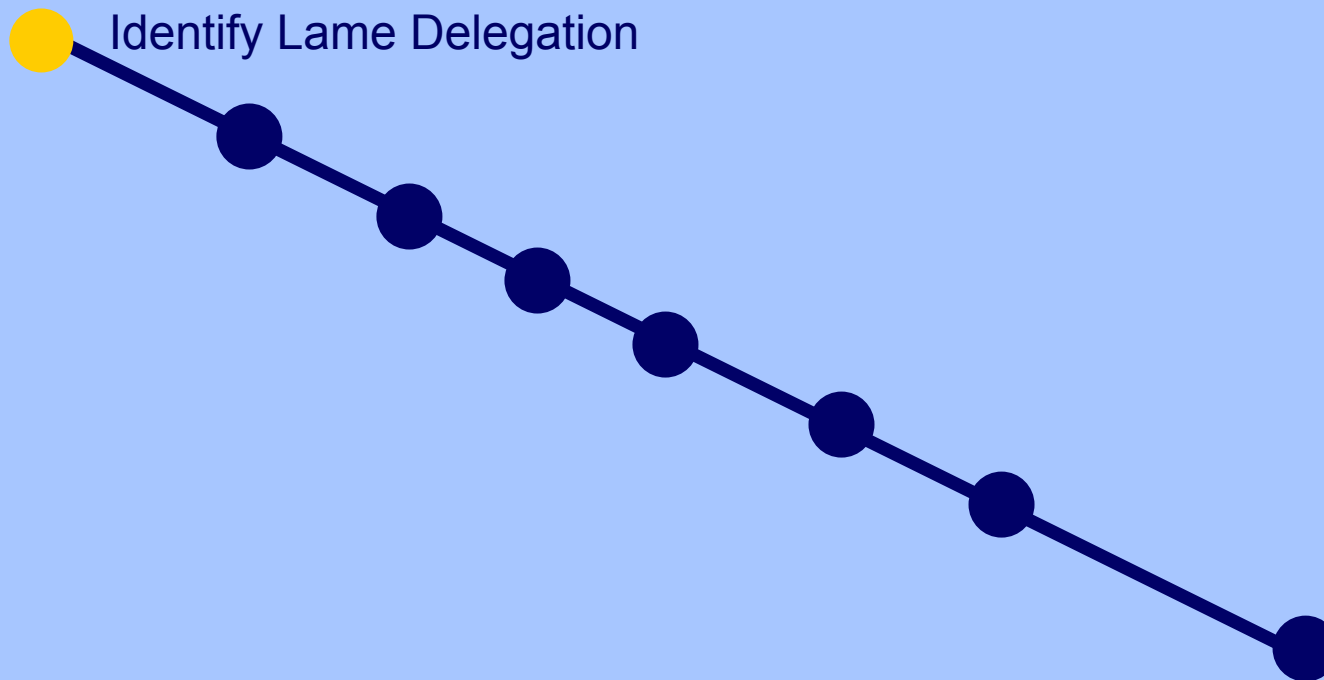
- Test



Policy Summary

Four Phases

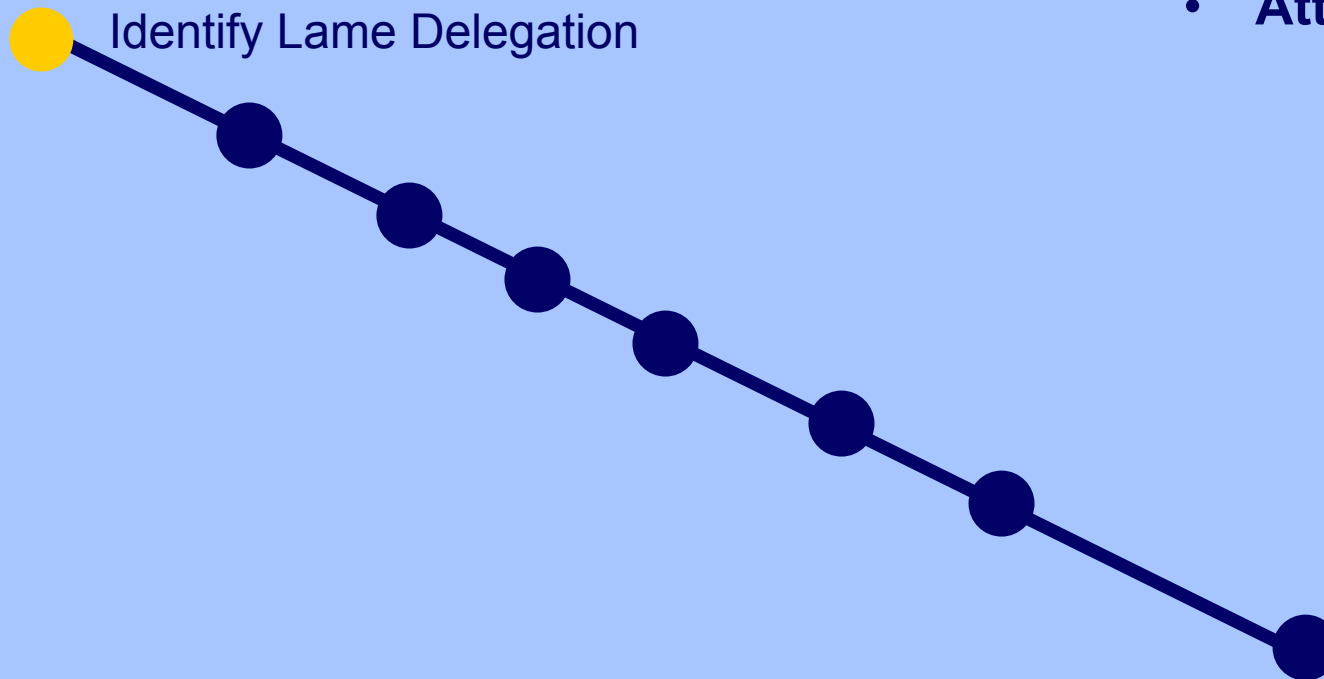
- Test



Policy Summary

Four Phases

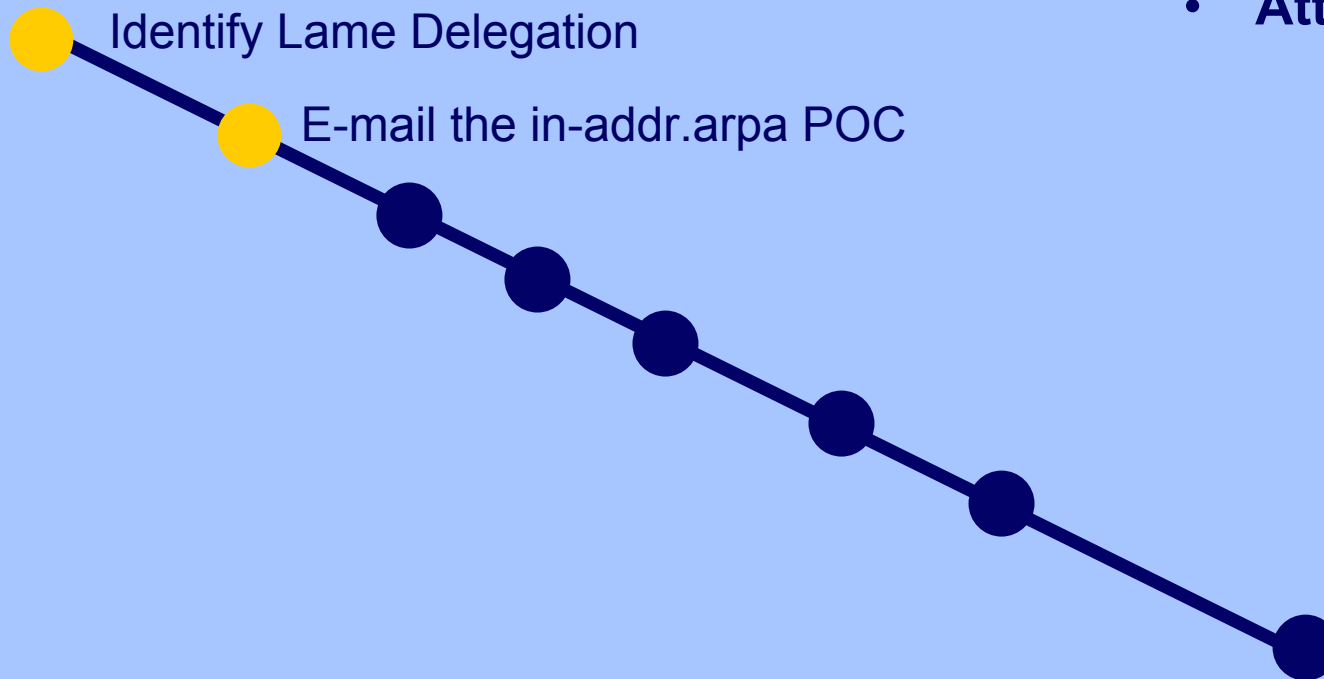
- Test
- Attempt Contact



Policy Summary

Four Phases

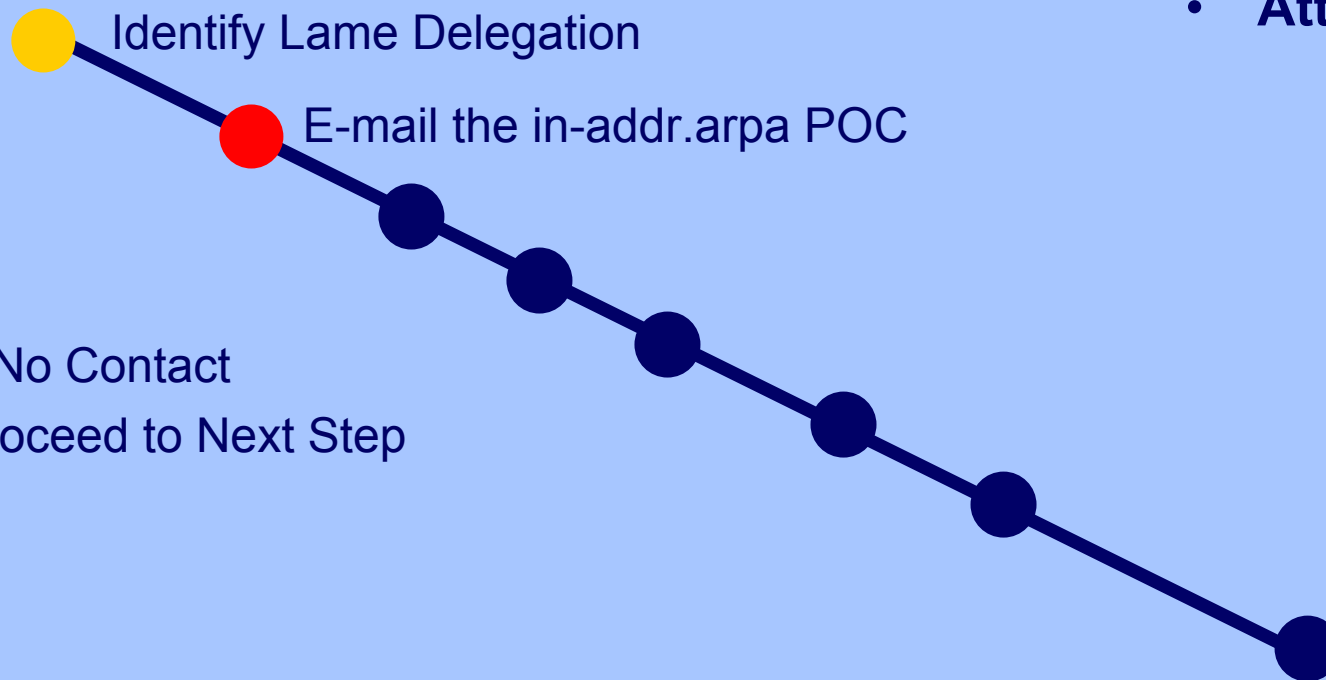
- Test
- Attempt Contact



Policy Summary

Four Phases

- Test
- Attempt Contact

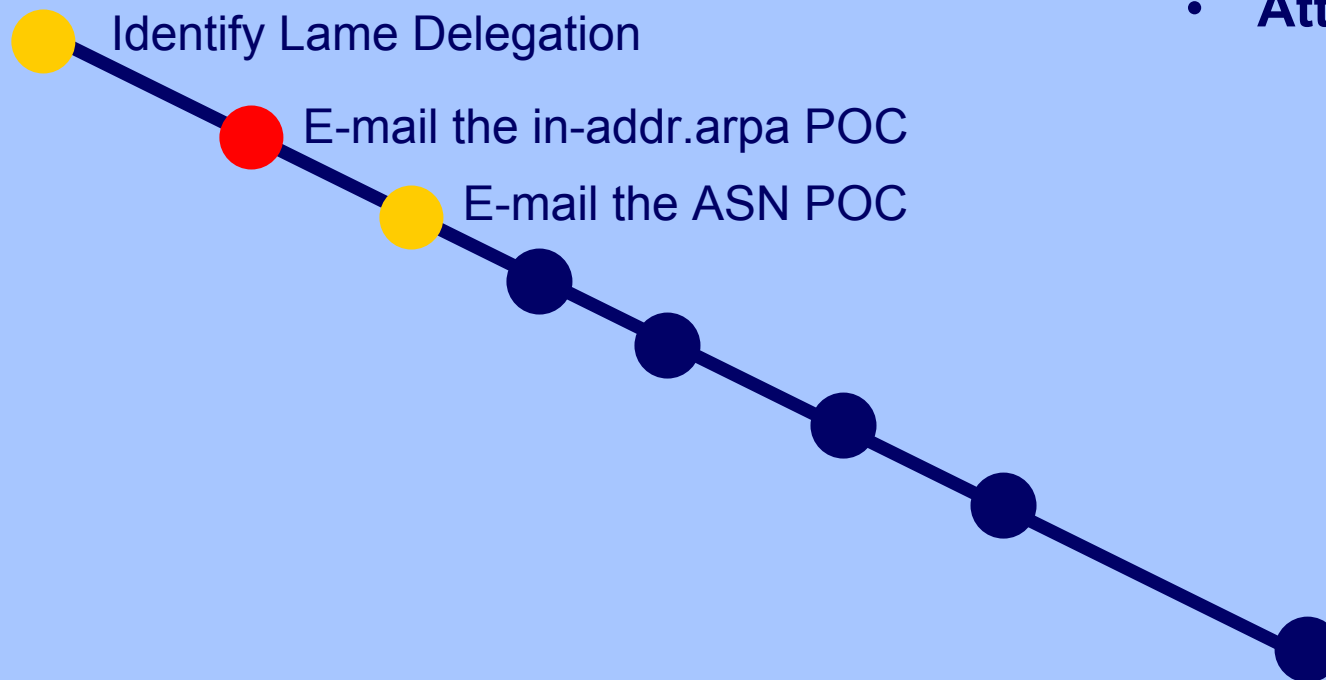


If No Contact
Proceed to Next Step

Policy Summary

Four Phases

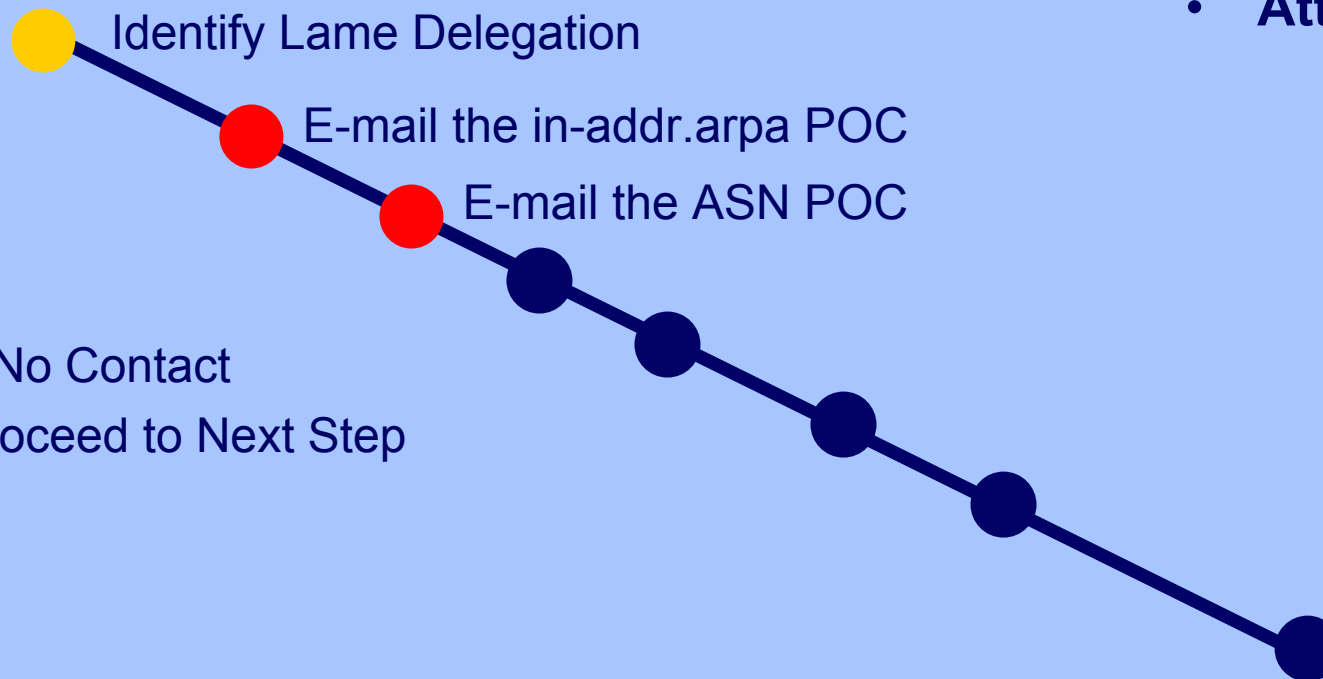
- Test
- Attempt Contact



Policy Summary

Four Phases

- Test
- Attempt Contact



If No Contact
Proceed to Next Step

Policy Summary

Four Phases

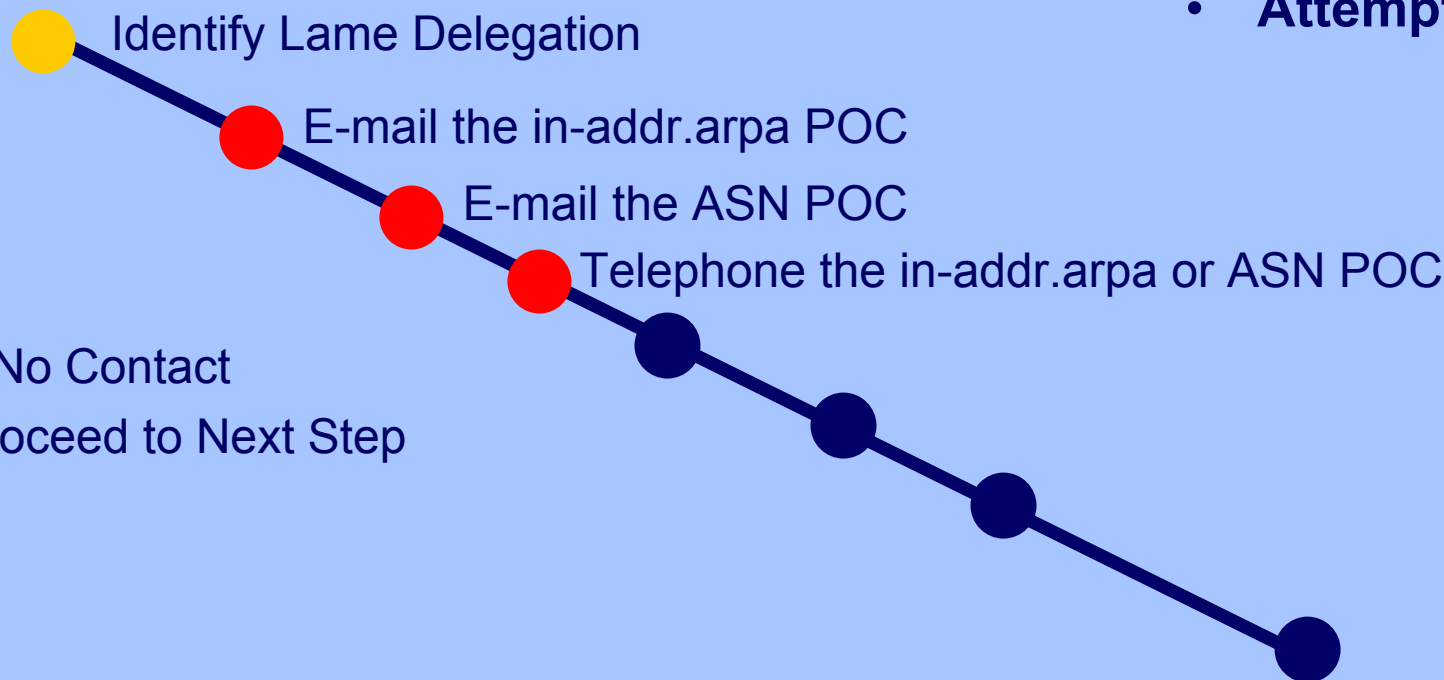
- Test
- Attempt Contact



Policy Summary

Four Phases

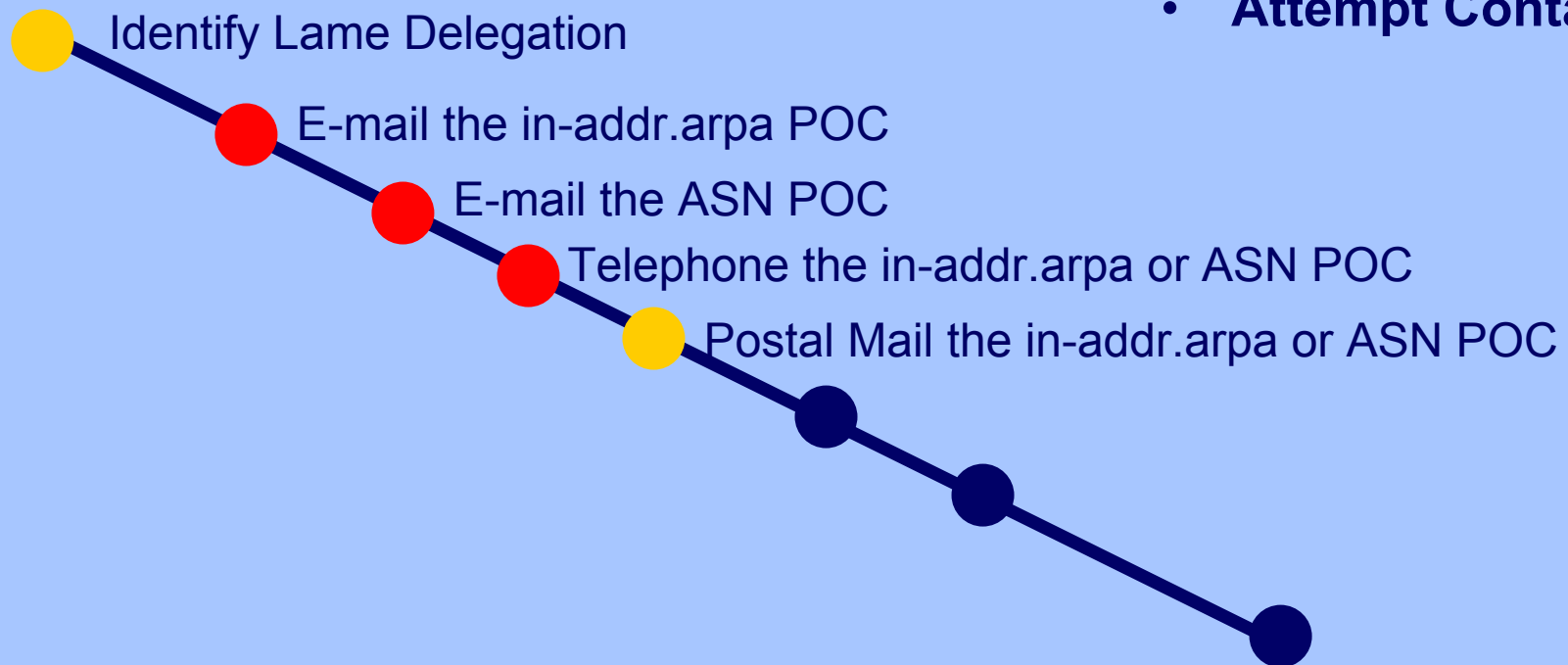
- Test
- Attempt Contact



Policy Summary

Four Phases

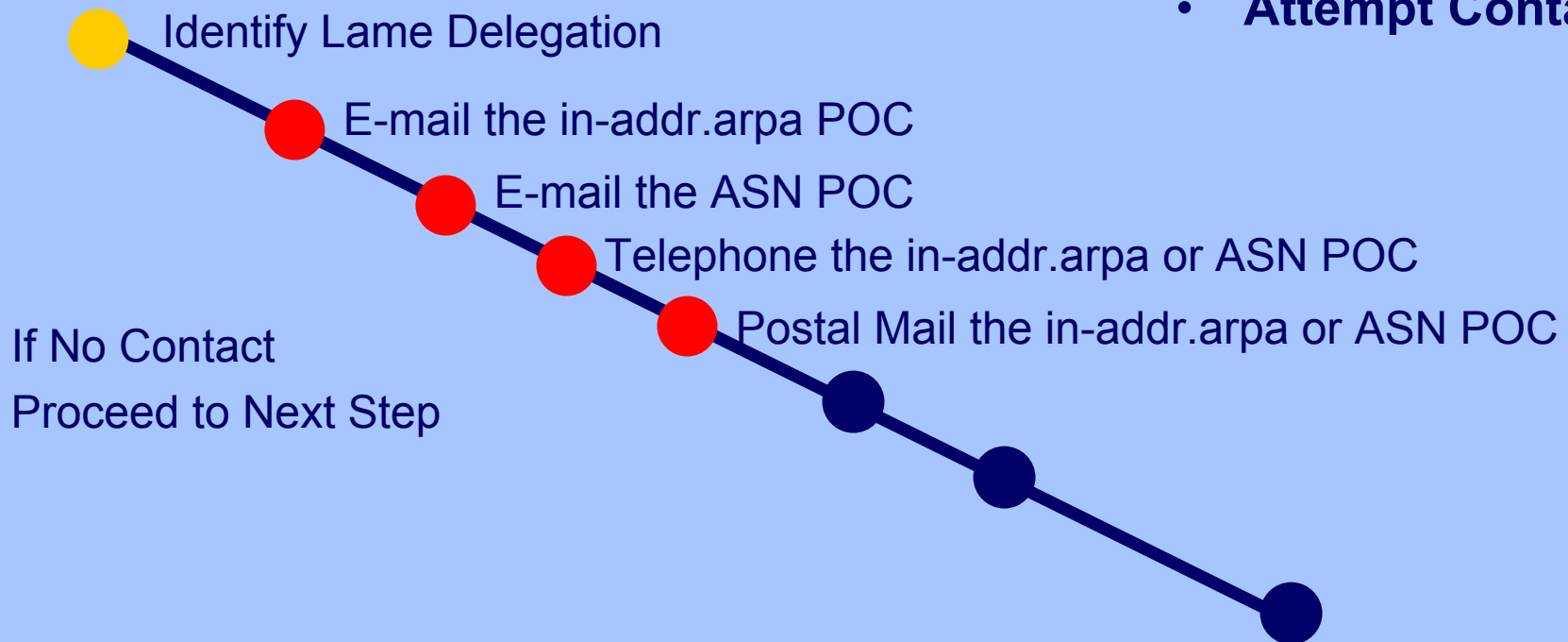
- Test
- Attempt Contact



Policy Summary

Four Phases

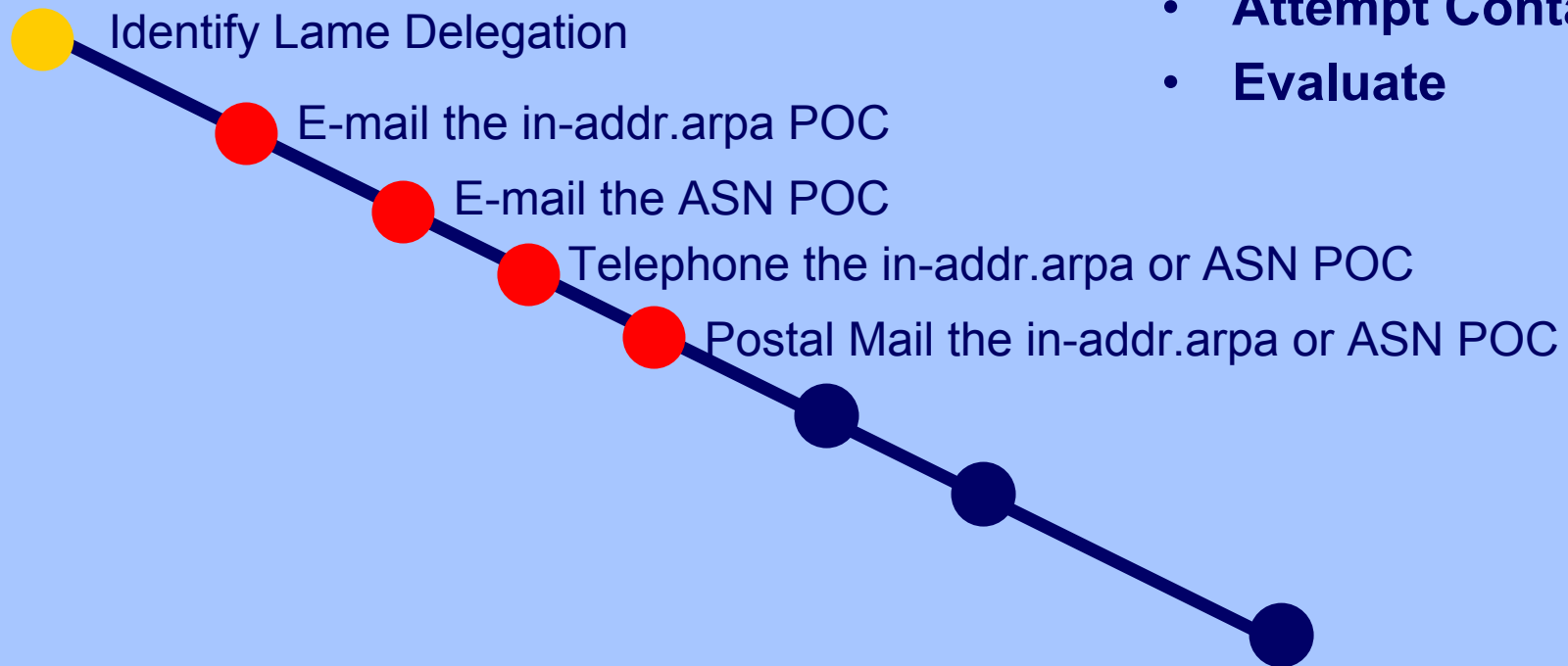
- Test
- Attempt Contact



Policy Summary

Four Phases

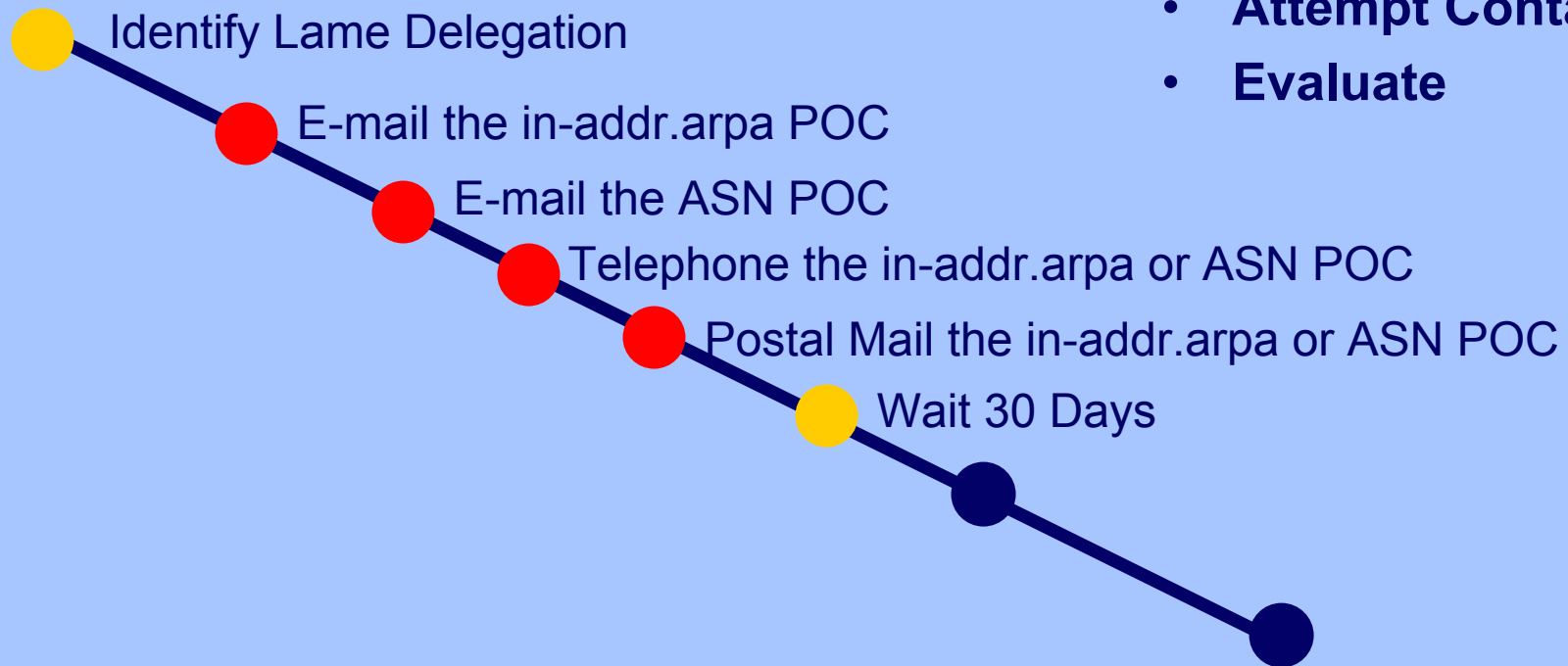
- Test
- Attempt Contact
- Evaluate



Policy Summary

Four Phases

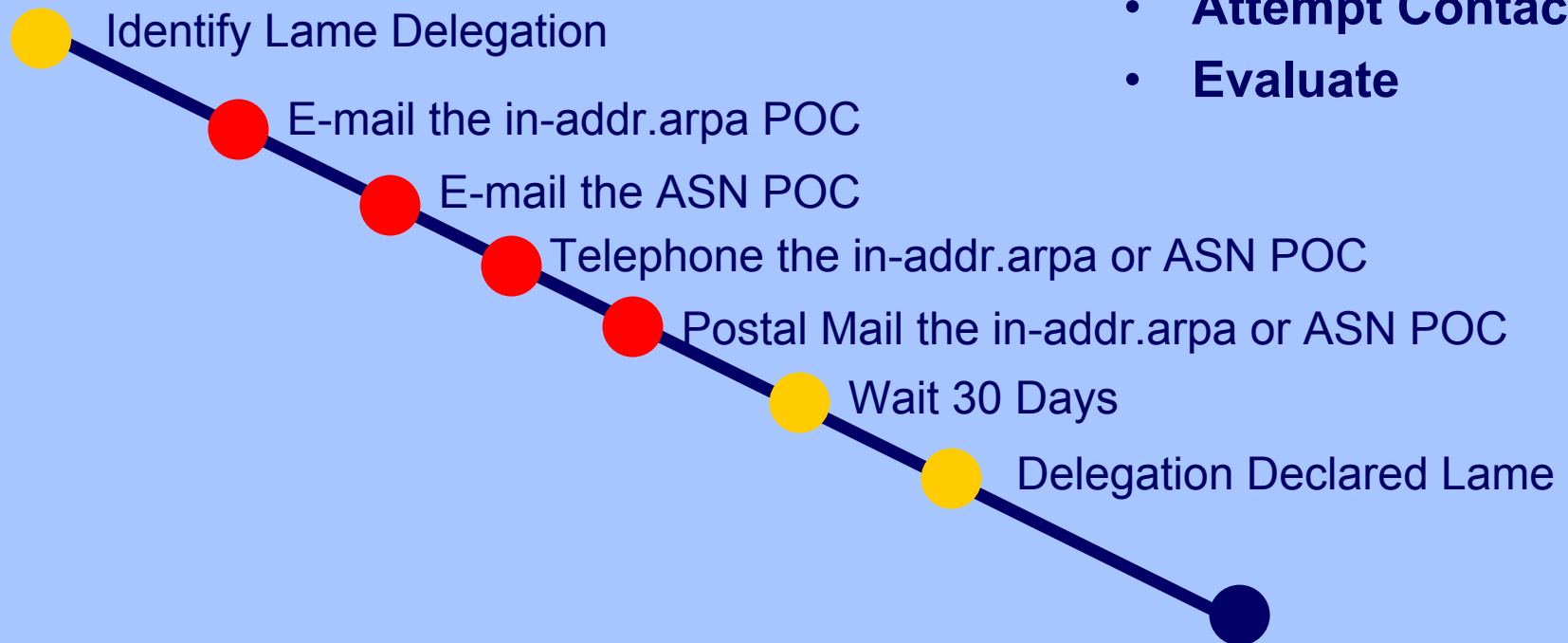
- Test
- Attempt Contact
- Evaluate



Policy Summary

Four Phases

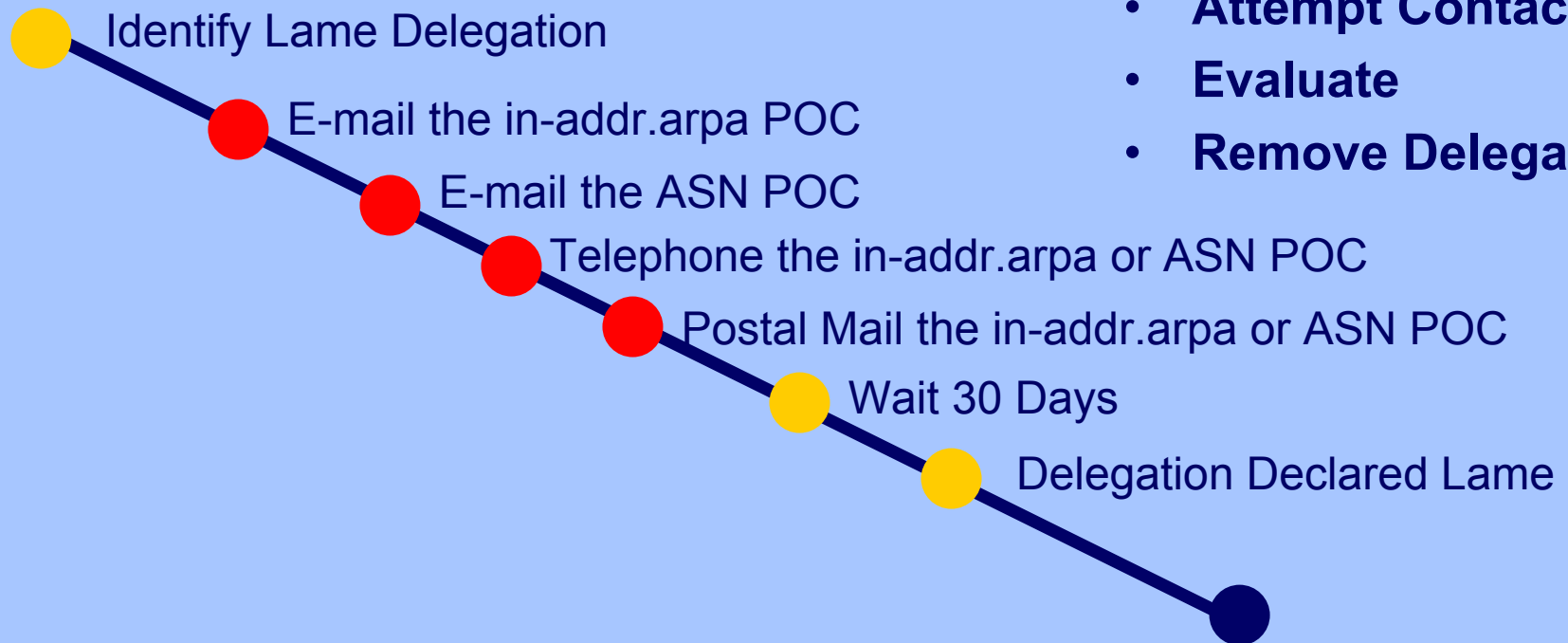
- Test
- Attempt Contact
- Evaluate



Policy Summary

Four Phases

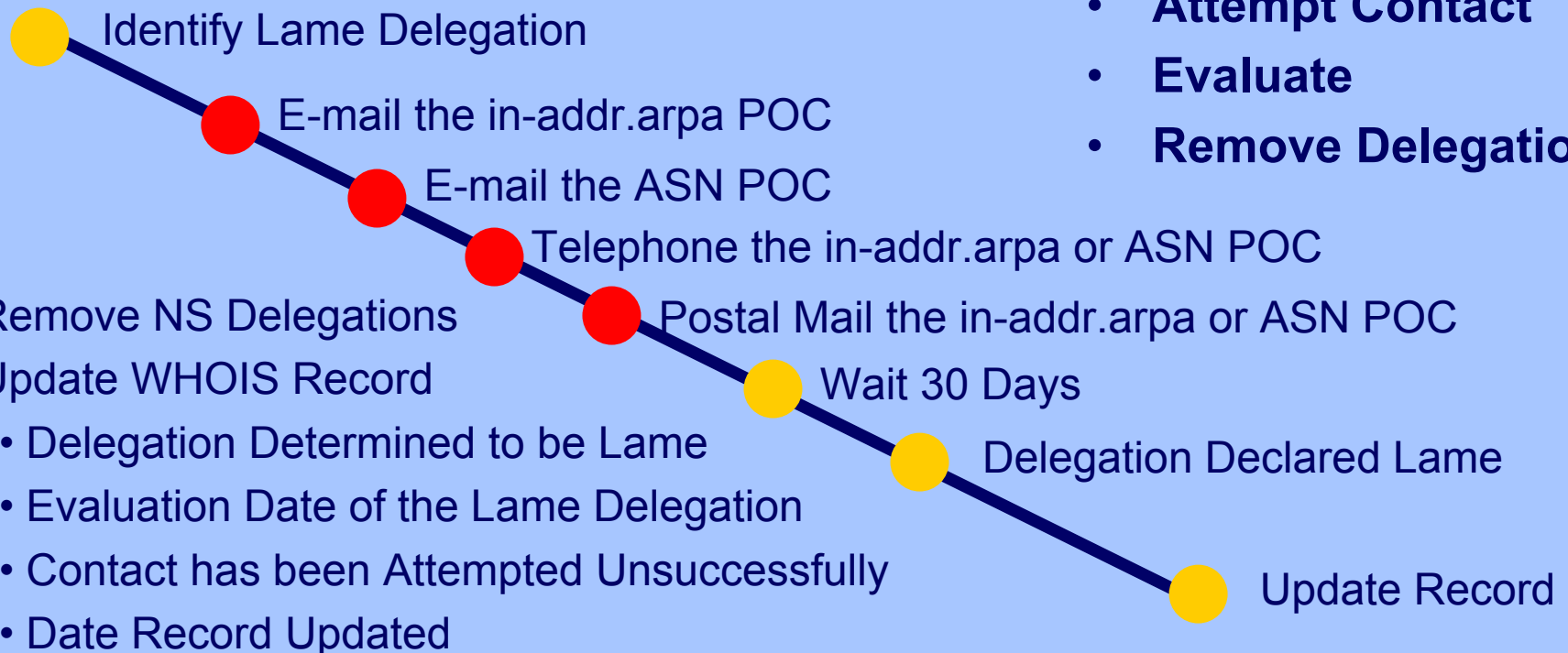
- Test
- Attempt Contact
- Evaluate
- Remove Delegation



Policy Summary

Four Phases

- Test
- **Attempt Contact**
- **Evaluate**
- **Remove Delegation**



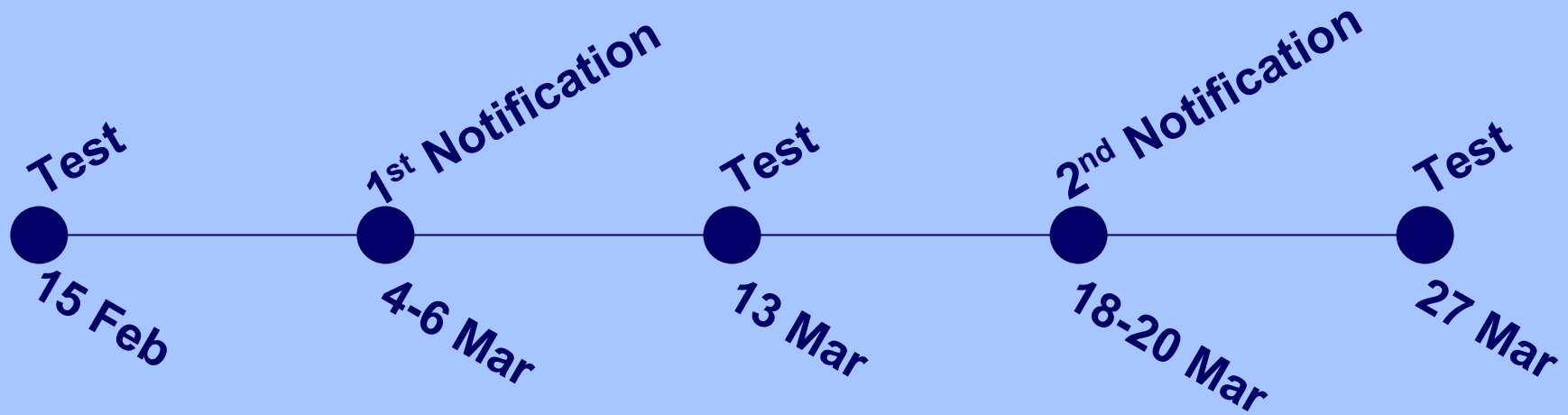
Lame Delegation Test

- * Query for SOA record of zone
 - ▶ Try all IP addresses for each server of zone
- * In response, look for:
 - ▶ No Authoritative Answer (AA) bit set
 - ▶ AA bit set, but an empty answer section
 - ▶ AA bit set, but answer is not an SOA record

What is Not Flagged

- * Not flagged as lame in this round of testing:
 - ▶ No IP address for name server
 - ▶ No answer from server
- * This will be flagged in the future

Timeline



Results

	Zones Checked	Flagged for Lameness
13 Feb	198,213	55,281
27 Mar	55,281	35,944

* 13 Feb findings, percentage of servers

- ▶ 77% not flagged as lame (good, no address/answer)
- ▶ 19% not having an Authoritative Answer bit set
- ▶ 4% having an authoritative empty answer section
- ▶ <1% having an authoritative non-SOA answer

Notification Results

	Telephone	Email
1 st Week	85	80
2 nd Week	40	39
3 rd Week	52	102
4 th Week	39	39
Total	216	260

Help Desk Actions

- * Determine the problem/exact question
 - ▶ Use “Lame” tool, BIND’s dig tool
 - ▶ Review results with customer
- * Explain expected results
- * Walk through steps to correct ARIN DB entry
- * Refer customer for further assistance:
 - ▶ Their local support
 - ▶ Vendor of their name server
 - ▶ BIND documentation (if using a BIND server)

Observations

* People are interested

- ▶ Want to correct problem
- ▶ Want to know what this is about
- ▶ Based on feedback from community:

http://www.arin.net/registration/lame_delegations/index.html

* This will be a deliberate process

Next Steps

- * Continue notification as per policy
- * Update database information
- * Continue testing for lameness
- * Identify engineering issues with testing
- * Identify implementation issues
- * Share experiences with other registries

Thank you,
thank you very much