



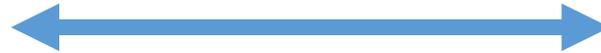
Govt Participation

Infrastructure
Only

100%
Funding

No public
Encouragement

Use Required
By Regulation



Permission to broadcast

Needed = Infrastructure + \$40M + \$4M/yr

Possible Revenue Streams



- Guaranteed delivery data transmission
- PNT Interference Detection and Monitoring
- Proof of Time and Proof of Position
- Licensing Receivers
- Licensing the Signal
- Licensing the Data Channel
- Licensing a Portion of the Signal
- Broad Based User Fees

Sample Business Model



- 20 year lease
- Operator allowed to provide other services w/o interfering with basic service.
- Customer gets equipment lease & tiered services (cable box model)
- Time synched to USNO
- Operator has exclusive right to provide differential services.
- Government may or many not encourage or require use of a resilient time source for CIKR.

Early Adopters



Industry	Primary Use	Early Adopter Subscriptions
Telecommunications	Sync Time and Phase	750,000
Financial Services	Sync Time	50,000
Energy	Frequency and Phase	10,000
Transportation	Time	5,000,000

Sources:

Responses to “DOT Request for comment: <http://www.regulations.gov/#!docketDetail;D=DOT-OST-2015-0053>”

<http://www.dhs.gov/critical-infrastructure-sectors>

Industry/Trade Associations (e.g., ATIS, Small Cell Forum, SIFMA, NERC)

References:

-Executive Order 13636 of February 12, 2013

-Presidential Policy Directive/PPD-21 of February 12, 2013

-FAA Final Report on “Loran’s Capability to Mitigate the Impact of a GPS Outage on GPS Position, ---Navigation, and Time Applications” dated March 2004.

Institute for Defense Analysis “Independent Assessment Team (IAT) Summary of Initial Findings on eLoran” dated January 2009.

-DOT Volpe National Transportation Systems Center “Vulnerability Assessment of the Transportation Infrastructure Relying on the Global Positioning System” dated August 29, 2001.

-DOT Volpe National Transportation Systems Center “Benefit-Cost Assessment Refresh – The Use of eLoran to Mitigate GPS Vulnerability for Positioning, Navigation, and Timing Services” dated November 5, 2009.

Early Adopters Reasons



- Lower Cost
- Continuity of Operations
- Data Services
- Economic Impact

Telecom Value Prop



Competitive Advantage

Reduced Costs

Increased Capacity

Increased Network Resilience.

Future Proof

*Based on mature eLoran technology developed in the US and now operating in the UK.