

*1/11/93 copy to Cranford  
Shelburne  
Shields*



**Department of Energy**  
Washington, DC 20585

December 17, 1992

**Mr. Gerald Cranford**  
Acting LSS Administrator  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

**Re: LSS Cost Projections**

Dear Mr. Cranford:

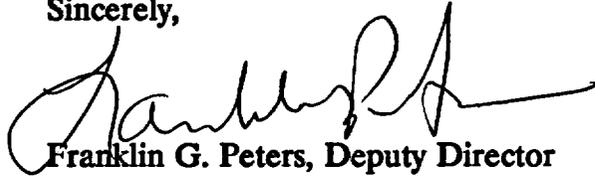
This transmits LSS cost projections developed by OCRWM's Information Management Division (IMD) in response to the LSS Administrator's letter of October 6, 1992. As requested, we have used the LSS functionality, database content and scope, and number of users per the original SAIC conceptual design except where overridden by an InfoSTREAMS-induced consideration. Design, development, implementation, operations and maintenance costs for both capture and dissemination activities are provided for each of three options, together with all applicable supporting assumptions.

Mr. Donnelly's letter requested only approximate costs that the Commission felt were necessary to weigh the merits of each alternative from a cost perspective. We discussed in the October 27 clarifications meeting at NRC that we could only "ballpark" or place boundaries on some costs, since two increments of InfoSTREAMS have not yet been initiated and the target system to which the software would be converted has not been identified. Nevertheless, we believe that this detailed analysis and the complete set of spreadsheets delivered by IMD at last week's preliminary briefing are responsive to the needs of the Commission and agreements reached in the clarification meeting.

An assessment of the technical feasibility of accomplishing each of three alternative approaches was also requested. It is our finding that each approach is technically feasible, but our analysis of approaches to optimizing the dissemination activity is not scheduled to begin until FY 1994. We continue to believe, however, that certain parties to the negotiated rulemaking may register significant objection to the Department of Energy capturing their LSS material.

Hopefully, we can now resolve the LSS management issues. With best regards for the upcoming holiday season.

Sincerely,

A handwritten signature in black ink, appearing to read "Franklin G. Peters". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Franklin G. Peters, Deputy Director  
Office of Civilian Radioactive  
Waste Management

Enclosure:  
Cost Analysis of LSS Alternatives

cc:  
H. Thompson, NRC  
L. Donnelly, NRC  
S. Rousso, RW-10  
J. Roberts, RW-30  
B. Cerny, RW-12  
D. Graser, RW-12

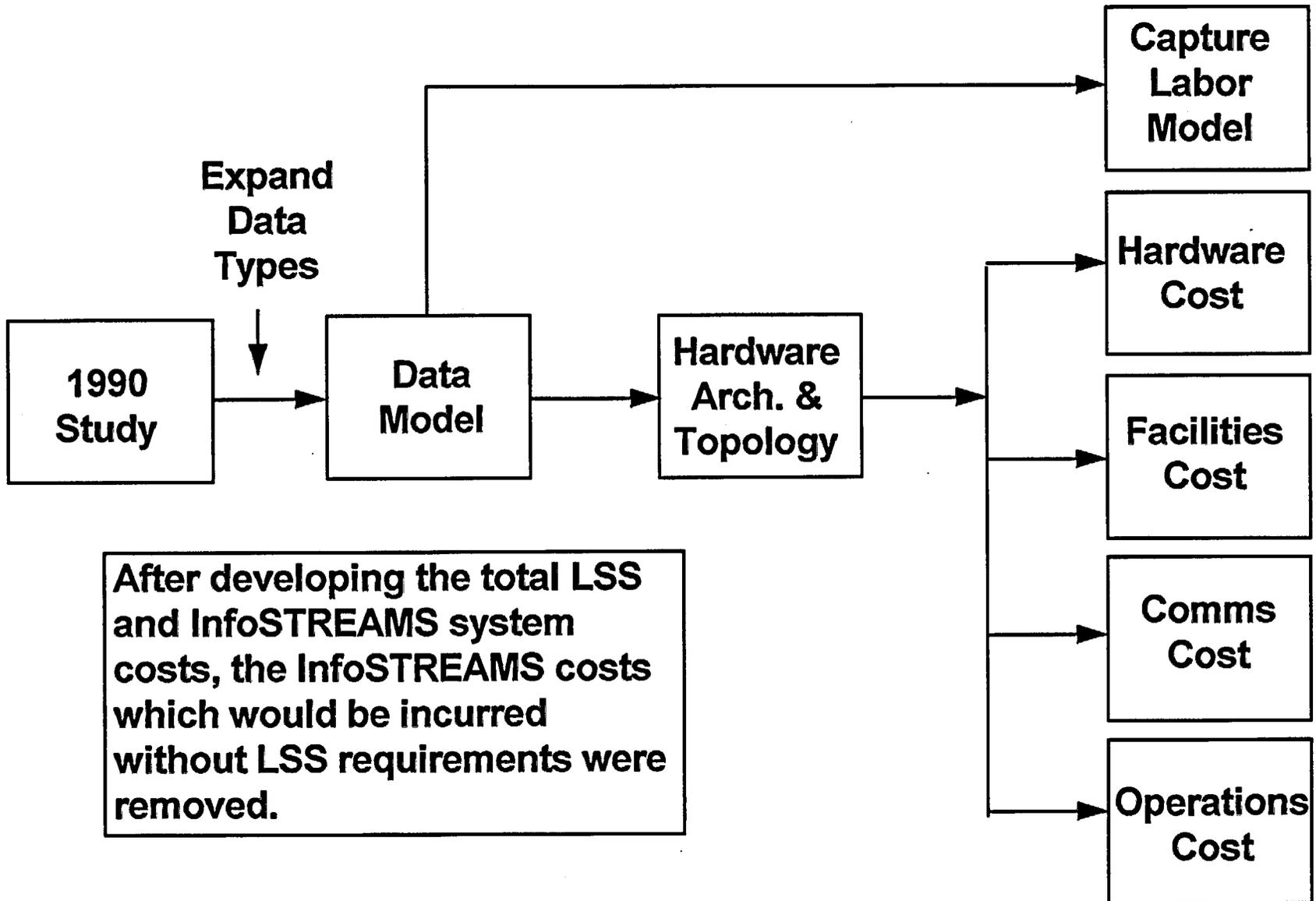
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# **Cost Analysis of LSS Alternatives**

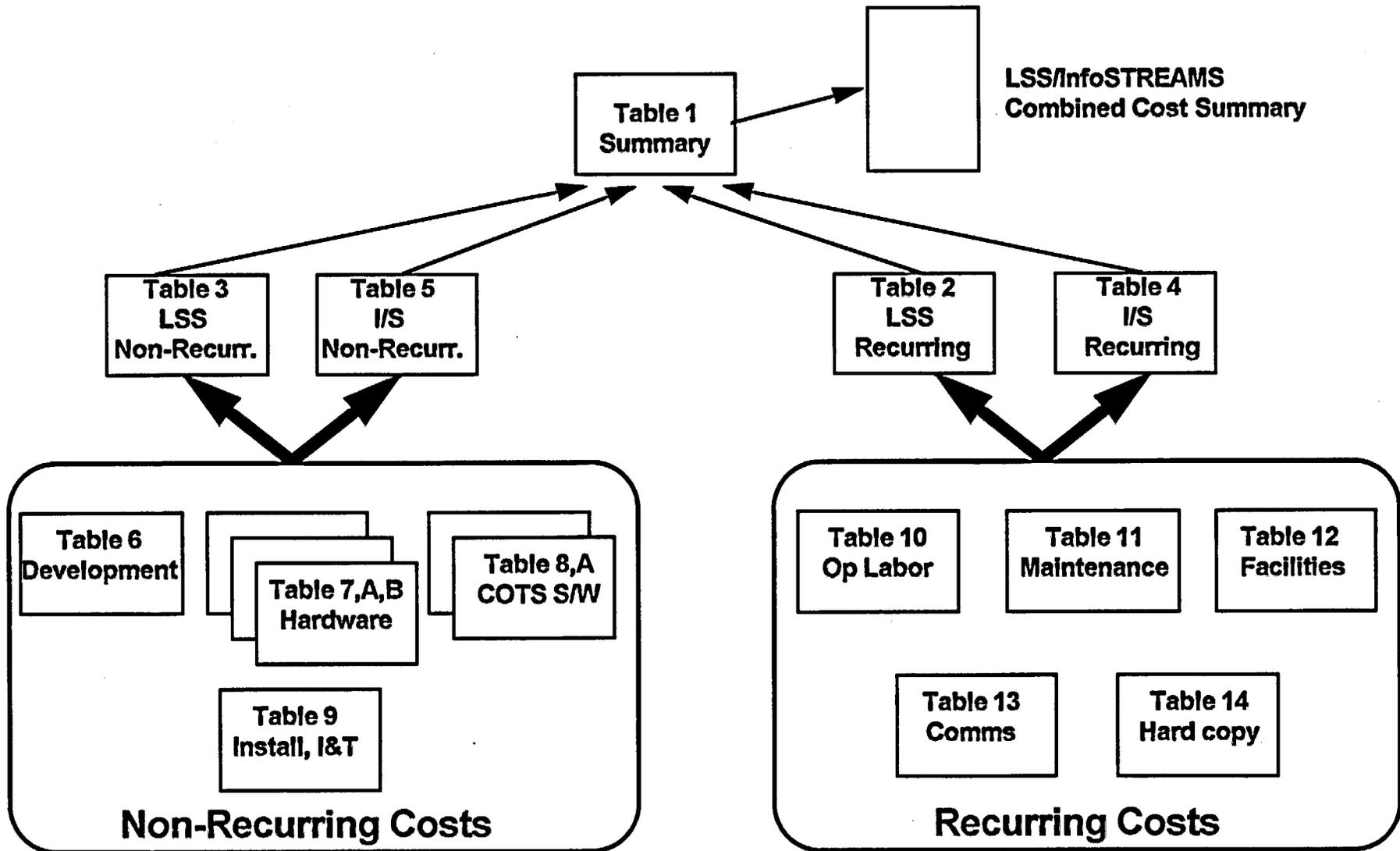
**DOE IMD Briefing  
to NRC  
December 11, 1992**

	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
<b>Modifications to InfoSTREAMS</b>	No change. Used for capturing 85% of LSS volume.	Enhanced to include full LSS capture functionality, used for capturing 100% of LSS volume.	Enhanced to include full LSS functionality for capture and dissemination (all LSS), capture & dissem. are physically separate. InfoSTREAMS used by DOE for LSS and other OCRMM records.
<b>LSS Capture Functionality</b>	Additional system with full LSS capture functions on TBD platform/OS. Captures 15% of LSS volume plus InfoSTREAMS output.	N/A	In InfoSTREAMS
<b>LSS Dissemination Functionality</b>	Additional system with full LSS retrieval functionality on TBD platform/OS	Additional system with full LSS retrieval functionality on TBD platform/OS	In InfoSTREAMS

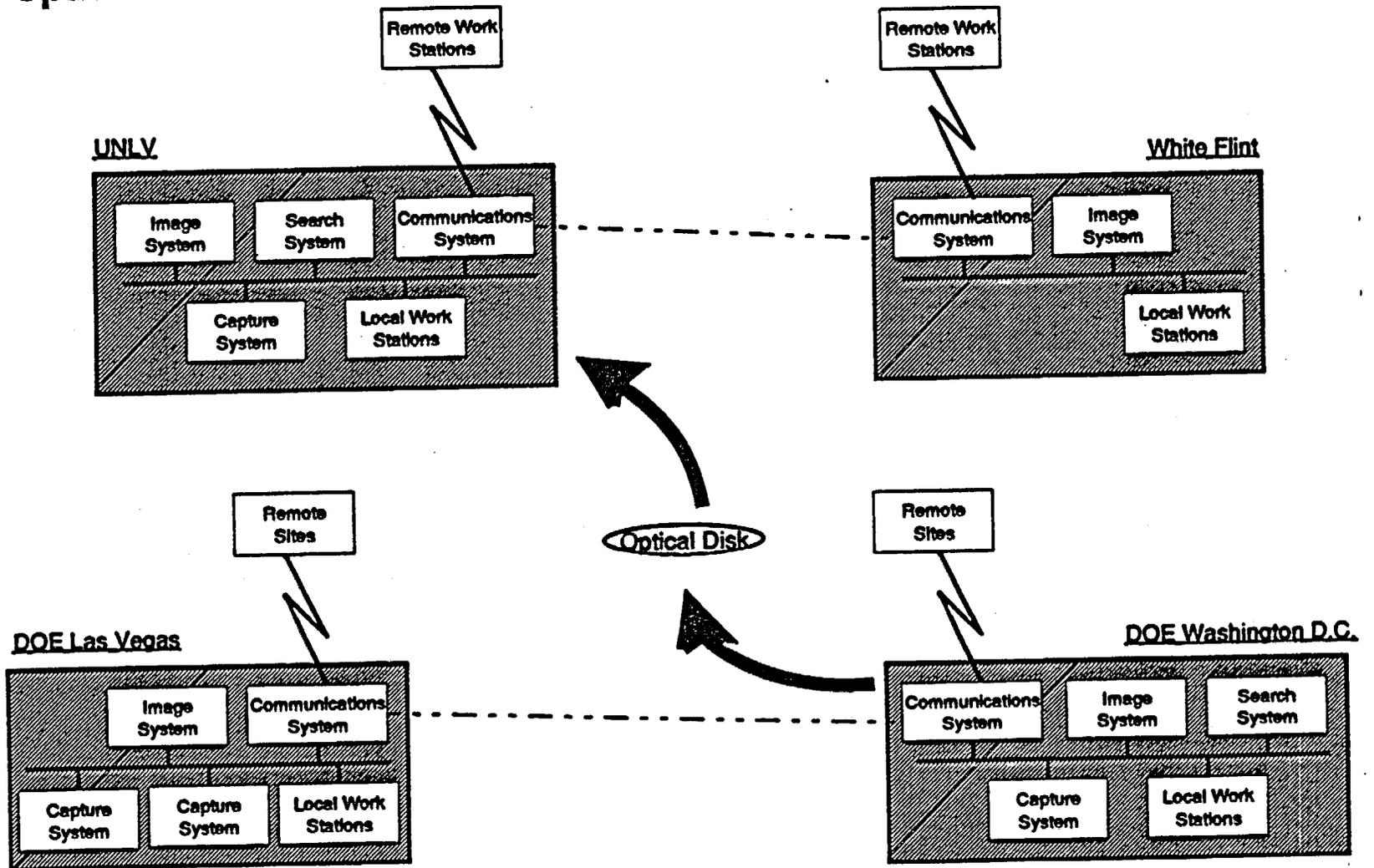
# Approach



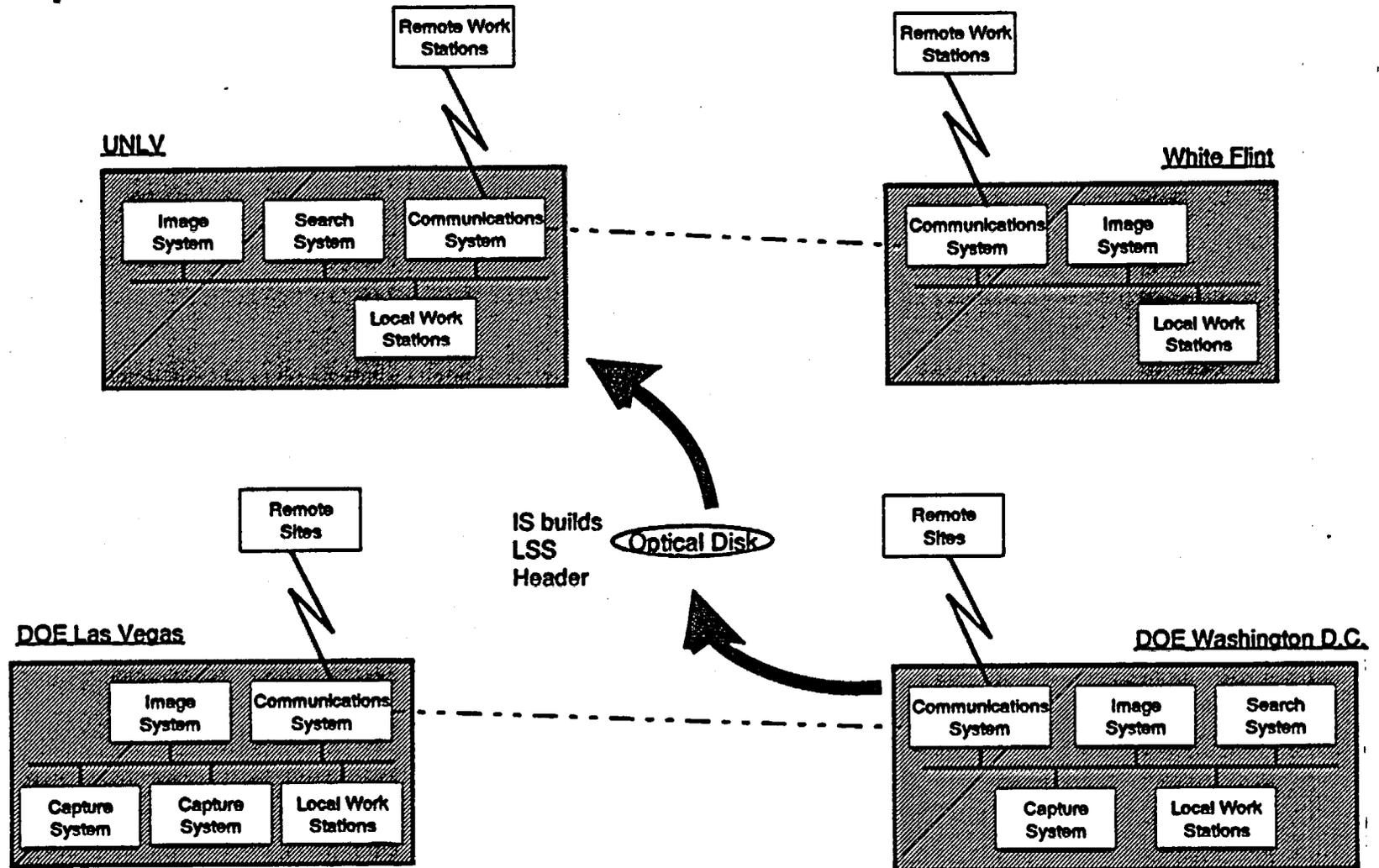
# Cost Model



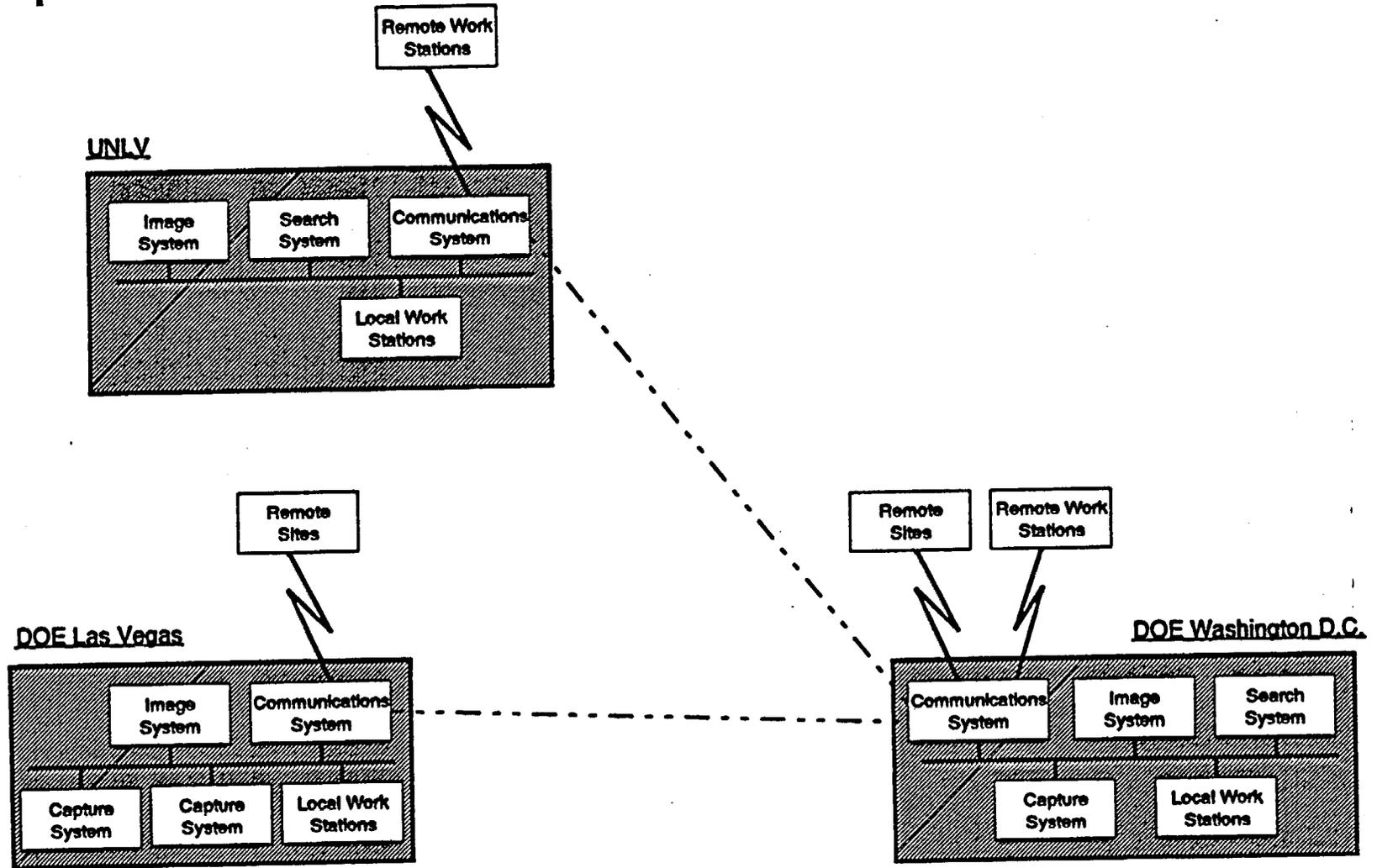
# Option 1



# Option 2



# Option 3



# Relationship to 1990 SAIC Study

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- **Used 1990 labor model as starting point**
- **Used 1990 operations labor where applicable**
- **Key differences:**
  - **Assume existence of InfoSTREAMS with significant volume of electronically captured data**
  - **Increased number of data types, each requiring different levels of processing**

# Simplifying Assumptions

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- **Non-InfoSTREAMS functionality is assumed to reside on "generic" hardware and operating systems (i.e. non-vendor specific) to ensure full and open competition per commitments made to OMB.**
- **Constant 1992 dollars and salaries are used throughout.**
- **Major hardware components are estimated with a built-in addition for non-major components (e.g. routers, cable, ...).**
- **Hardware maintenance is calculated as 10% of the hardware cost per year**
- **Major component replacement nominally at 8 years. Hardware replacement is scheduled to avoid conflicts with the licensing hearings.**

# **Simplifying Assumptions**

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- **Some discount was made for hardware purchased in out years to account for decreasing prices.**
- **The cost of non-vendor specific hardware components are roughly estimated by averaging two or more comparable components from different vendors**
- **Labor costs for system operations are obtained directly from the 1990 study where possible. This study uses a flat burden of 100% of salary.**
- **Where appropriate the hours required for operations labor have been modified, but the labor costs/hour are based on the SAIC study.**

# Simplifying Assumptions

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- Labor costs for system development are based on InfoSTREAMS actual and estimated costs using current burdens.
- NRC administrative and training costs are not included in the estimates. This is consistent with the 1990 study.
- Final InfoSTREAMS estimates include only the LSS-relevant portions of InfoSTREAMS

**Table 3-1C. LSS Cost Summary with Non-LSS InfoSTREAMS  
Costs Removed**

LSS	1990 Study Est.			
<b>Non-Recurring Costs</b>	<b>Alternative 0</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
Development	\$5,508,000	\$15,769,342	\$13,604,844	\$0
Hardware	\$24,562,400	\$17,330,500	\$15,885,800	\$0
COTS S/W	\$2,133,500	\$1,506,000	\$1,215,000	\$0
Install, I&T	\$2,048,391	\$2,240,000	\$2,240,000	\$0
<b>Recurring Costs</b>				
Capture Labor	\$125,699,000	\$31,653,148	\$3,608,724	\$0
Operations Labor	\$27,720,000	\$25,080,000	\$25,080,000	\$0
Maintenance	\$18,691,000	\$8,605,980	\$7,820,680	\$0
Facilities	\$13,710,000	\$13,875,360	\$12,699,600	\$0
Hardcopy	\$9,045,000	\$8,813,200	\$8,813,200	\$0
Comms	\$8,874,000	\$2,419,200	\$2,419,200	\$0
<b>TOTAL</b>	<b>\$237,991,291</b>	<b>\$127,292,730</b>	<b>\$93,387,048</b>	<b>\$0</b>

**InfoSTREAMS - LSS Relevant Portion**

	Alternative 1	Alternative 2	Alternative 3
<b>Non-Recurring Costs</b>			
Development	\$0	\$540,299	\$5,899,799
Hardware	\$1,719,960	\$1,821,600	\$1,965,480
COTS S/W	\$605,880	\$636,900	\$632,940
Install, I&T	\$0	\$0	\$1,120,000
<b>Recurring Costs</b>			
Capture Labor	\$60,053,441	\$70,734,590	\$68,660,918
Operations Labor	\$0	\$0	\$15,015,000
Maintenance	\$1,028,808	\$1,081,872	\$1,137,840
Facilities	\$978,912	\$978,912	\$978,912
Hardcopy	\$0	\$0	\$8,813,200
Comms	\$0	\$0	\$1,612,800
			\$0
<b>TOTAL</b>	<b>\$64,387,001</b>	<b>\$75,794,173</b>	<b>\$105,836,889</b>
<b>LSS Total Attributable Costs</b>	<b>\$191,679,731</b>	<b>\$169,181,221</b>	<b>\$105,836,889</b>

**Notes:**

1. This Table shows the LSS costs and those InfoSTREAMS costs which are needed to support LS. It assumes the existence of the full InfoSTREAMS system but does not show InfoSTREAMS cost which would be incurred without the LSS requirement. The cost of capturing LSS-relevant records is included in this estimate since LSS records will require special processing.
2. Table summarizes a 12 year life cycle as compared with a 10 year life cycle in the 1990 study.
3. Table expressed in 1992 constant dollars.
4. NRC administrative and training dollars, such as those associated with copyright compliance and back charge administration are not included in the estimates. This is consistent with the 1990

## **Findings - Summary**

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- **Alternative 1 meets the requirements of the rule**
  - **DOE captures it's information through InfoSTREAMS**
  - **Other capture systems and dissemination systems are not located at DOE facilities**
- **Alternative 2 is less expensive than Alternative 1**
  - **No redundant capture system**
  - **Less difficult data port**
- **Alternative 3 is the most cost-effective**
  - **No redundant development efforts**
  - **No data port**
  - **One less facility**

# Findings - Summary

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- **Major Cost Differences From 1990 SAIC Study  
Are in Capture Labor**