U.S. Department of Homeland Security
Office of Chief Counsel
601 South 12th Street, TSA-2
Arlington, VA 20598

Transportation Security Administration

FOIA: TSA11-0080

August 22, 2011

Mr. John Verdi
Electronic Privacy Information Center
1718 Connecticut Avenue. N.W.
Suite 200
Washington, D.C. 20009

Re: EPIC v. TSA, Civil Action 1:11-cv-00290 (D.D.C.)

Dear Mr. Verdi:

Enclosed please find additional records found responsive to EPIC's FOIA request of October 5, 2010 seeking various records pertaining to TSA's use of Automated Targeted Recognition.

If you have any questions regarding this release, please contact Joseph W. Mead, U.S. Department of Justice, at 202-305-8546.

Sincerely,

Janessa Grady Fleming, Senior Counsel
TSA Office of Chief Counsel

Enclosure

SENSITIVE SECURITY INFORMATION

Transportation Security Administration

OPERATIONAL TEST PLAN (OTP)
OPERATIONAL TEST AND EVALUATION (OT&E)

for the

Advanced Imaging Technology (AIT) System

Automatic Target Recognition (ATR)

B3 49 U.S.C. § 114(r)

OFFICE OF SECURITY TECHNOLOGY

[redacted] B3, 49 U.S.C. § 114(r)

Director of Operational Test and Evaluation
Department of Homeland Security

Approval:

[redacted] B3, 49 U.S.C. § 114(r)

Manager
Test and Evaluation
TSA Office of Security Technology

Approval:

[redacted] B3, 49 U.S.C. § 114(r)

Manager, Operational Testing
Evaluation and Operational Integration Section
TSA Office of Security Technology

Concurrence:

[redacted] B3, 49 U.S.C. § 114(r)

Test Director
Evaluation and Operational Integration Section
TSA Office of Security Technology

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B3: 49 U.S.C. § 114(r)

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1.0 INTRODUCTION

1.1 Purpose of Operational Test and Evaluation Effort

The purpose of the Test and Evaluation (T&E) effort is to provide credible, timely, and sufficient information to support the evaluation of the effectiveness and suitability of the Advanced Imaging Technology (AIT) system with Automatic Target Recognition (ATR). ATR is an enhancement of existing AIT systems. ATR replaces the Image Operator (IO) that is currently employed with each system to review AIT imagery. This Operational Test Plan (OTP) describes how Operational Test and Evaluation (OT&E) will address the Critical Operational Issues (COIs), Additional Issues (AIs) and their associated criteria, Measures of Performance (MOPs) and measures. System requirements will be evaluated using the following COIs and AIs to determine the effectiveness and suitability of candidate systems:

- **COI 1: Mission Performance.** Does the AIT automatically detect and display possible threats concealed on passengers?
- **COI 2: Availability.** Is the AIT sufficiently available in potential deployable environments to process passengers?
- **COI 3:– Human-Systems Integration (HSI).** Can available trained TSOs utilizing the AIT system at airport checkpoints successfully conduct screening operations?
- **AI 4: Information Assurance.** Does the AIT prevent unauthorized system use [redacted]
- **AI 5: Interoperability.** Is the AIT interoperable with other checkpoint equipment and processes?

Results from the OT&E will be combined with results from Qualification Test and Evaluation (QT&E) that is being conducted by the Department of Homeland Security (DHS), Science and Technology (S&T) Directorate at the Transportation Security Laboratory (TSL) located in the William J. Hughes Technical Center at Atlantic City Airport, New Jersey, and will be reported in a System Evaluation Report (SER). The AIT ATR will be deemed effective if it meets Key Performance Parameter (KPP) requirements (detection and throughput) and any unmet non-KPP requirements do not significantly impact the AIT ATR mission. The AIT ATR will be deemed suitable if it meets KPP requirements (availability and safety) and any unmet non-KPP requirements do not significantly impact the AIT ATR mission. The SER will support an Acquisition Review Board (ARB) decision on the procurement of the AIT ATR capability as a software upgrade to the AIT systems that are currently fielded.

1.2 Scope

The Operational Test (OT) will be conducted at three airports, Ronald Reagan Washington National Airport (DCA), Hartsfield-Jackson Atlanta International Airport (ATL) and McCarran International Airport (LAS) for 36 days. The OT will involve [redacted] B3, b5, 49 U.S.C. § 114(r) [redacted]

Operational performance requirements for AIT systems represent critical capabilities that an AIT system must demonstrate in order to satisfy mission objectives. These requirements include the KPPs identified in the Operational Requirements Document (ORD) and other effectiveness and suitability parameters such as operational criteria in the AIT Test and Evaluation Master Plan (TEMP) Addendum and requirements assigned to OT&E from the AIT Procurement Specification (PS) and the AIT ATR Functional Requirements Document (FRD).

B3, b5, 49 U.S.C. § 114(r) [redacted]

The OT&E effort will assess the degree to which the delivered AIT systems are operationally effective and suitable. B3, 49 U.S.C. § 114(r) [redacted]

B3, B5, 49 U.S.C. § 114(r) [redacted]

1.3 System Description

The AIT system is a passenger screening technology that uses imaging technology to detect B3, 49 U.S.C. § 114(r) [redacted] and present them to an Image Operator

(IO). The IO communicates the location of those anomalies to the Screening Operator (SO). The SO will then perform secondary screening, as needed.

An AIT system with ATR capabilities is the same passenger screening technology referenced above with one difference. The system performs all necessary image analysis B3, 49 U.S.C. § 114(r) The AIT with ATR then displays information regarding the location of the anomalies on an avatar to facilitate secondary screening.

To ensure passenger privacy, AIT ATR systems will use computer-based image processing instead of an operator to analyze a passenger's image. B3, 49 U.S.C. § 114(r)

Prior to passing through and undergoing AIT scanning, passengers will divest objects in accordance with divestiture policies and regulations as instructed by the DO. The passenger will then enter the AIT and be verbally assisted by an SO in assuming the proper scanning position. Once the passenger is positioned, an SO initiates the scan. The AIT will perform an ATR algorithm on the images and determine if the passenger requires additional screening. If the AIT ATR determines additional screening is required, an SO conducts additional screening B3,

B3, 49 U.S.C. § 114(r)

Figure 1-1 presents the screening process flow for the AIT ATR. See Appendix A for more information on the specific AIT vendors.

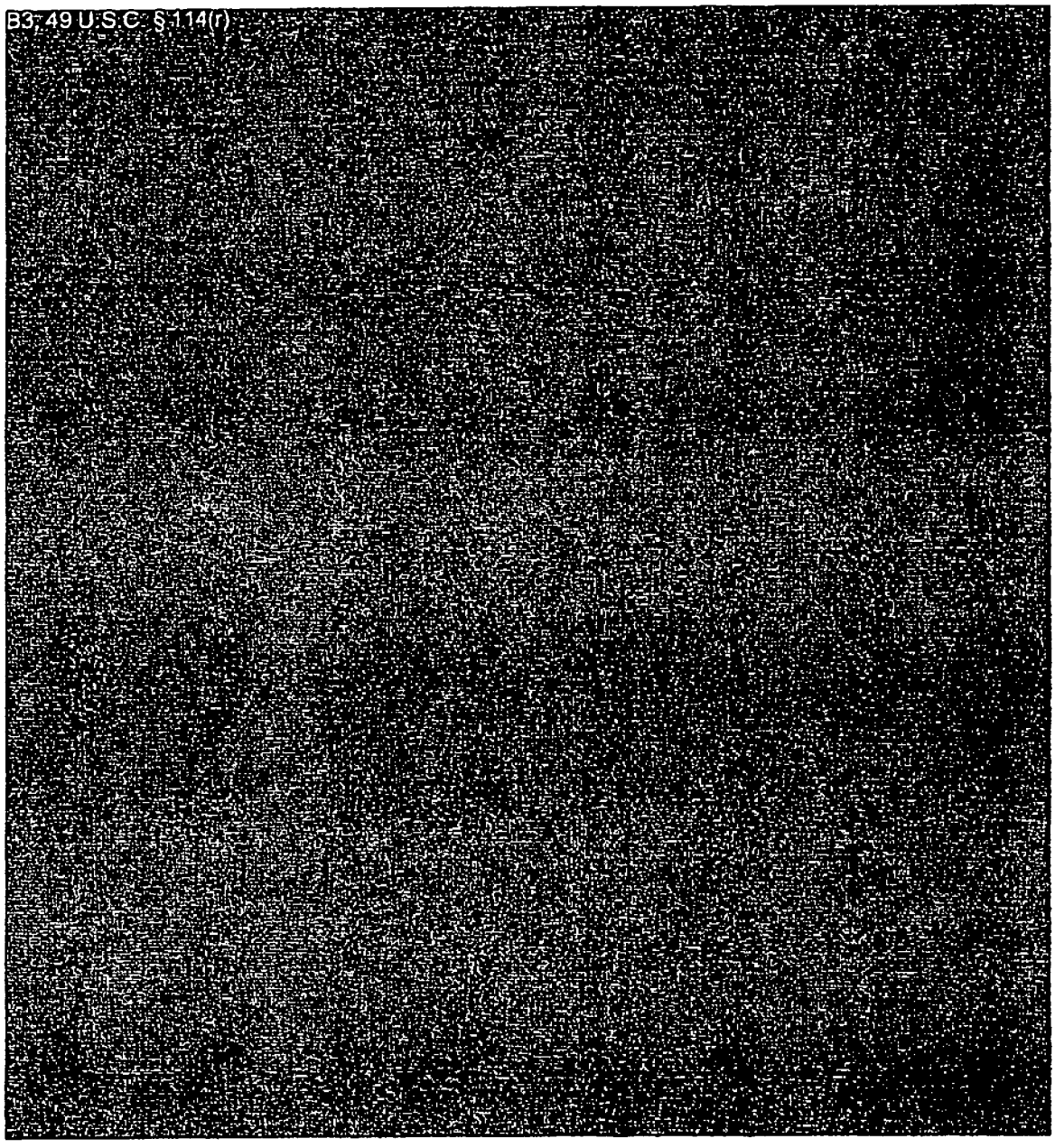
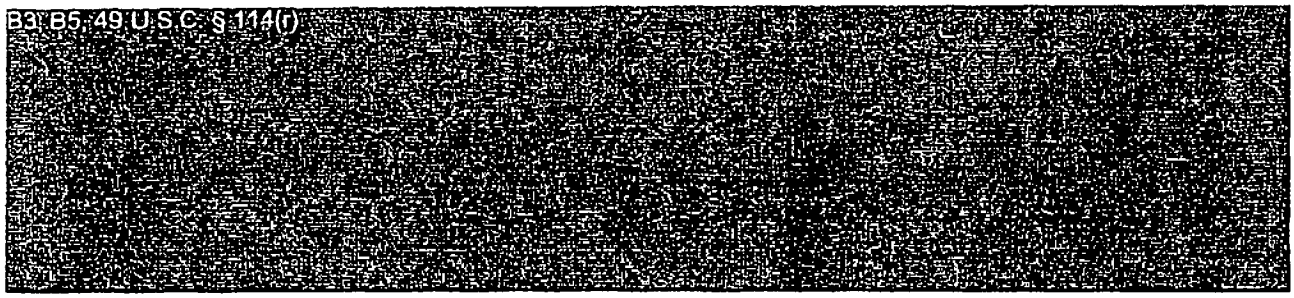
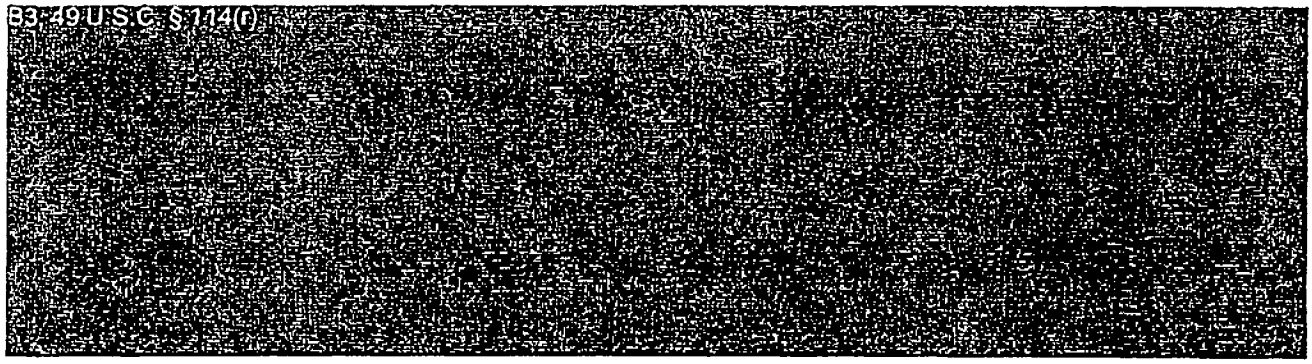


Figure 1-1: AIT ATR Screening Process Flow

1.4 Background

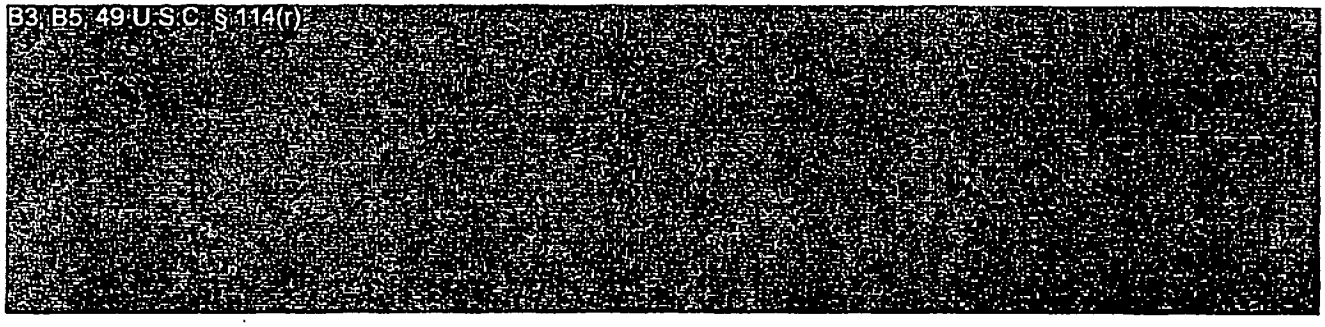


B3, 49 U.S.C. § AIT systems with IOs that have been deployed and are currently in use at select checkpoints across the nation B3, 49 U.S.C. § 114(r) Prior to the deployment of AIT systems, checkpoints were utilizing a combination of security technologies and procedures in the form of Enhanced Metal Detectors (EMDs), Hand-Held Metal Detectors (HHMDs) and pat-downs. Unlike the AIT, EMDs and HHMDs are unable to detect non-metallic objects.



1.5 Event Limitations

There are some limitations associated with the OT&E effort:



- [redacted]

B3; B5; [redacted] 114(r)

- [redacted]

1.6 Key Milestones, Events and Reports

Table 1-2 presents the schedule and key milestones for the AIT ATR OT&E.

Table 1-2: AIT ATR OT&E Schedule and Key Milestones

Activity / Milestone	Start Date	Complete Date
[redacted]	B3, B5, 49 U.S.C. § 114(r)	

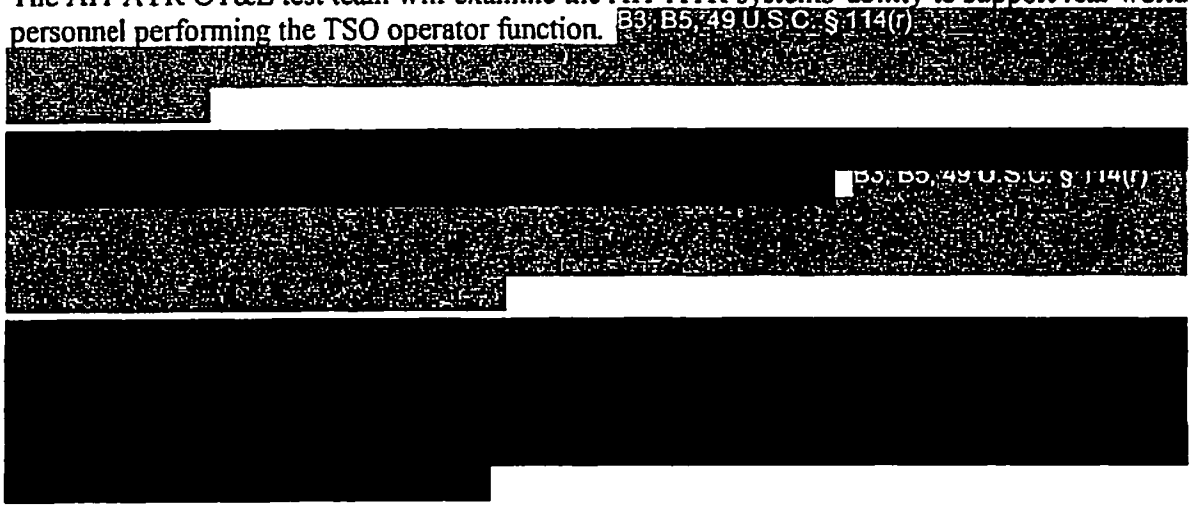
Activity / Milestone	Start Date	Complete Date
[redacted]	B3, B5, 49 U.S.C. § 114(r)	[redacted]

[redacted] Initial technical testing at the TSL B3, 49 U.S.C. § [redacted] was completed B3, 49 U.S.C. § 114(r) [redacted]

2.0 EVENT DESCRIPTION

2.1 Event Summary and Overall Methodology

The AIT ATR OT&E test team will examine the AIT ATR systems' ability to support real-world personnel performing the TSO operator function. B3; B5; 49 U.S.C. § 114(r)



2.2 Test Design

The following data collection methods (Table 2-1) will be undertaken during the AIT ATR OT&E. These methods will facilitate successful data collection for the AIT ATR system, (b) (5)

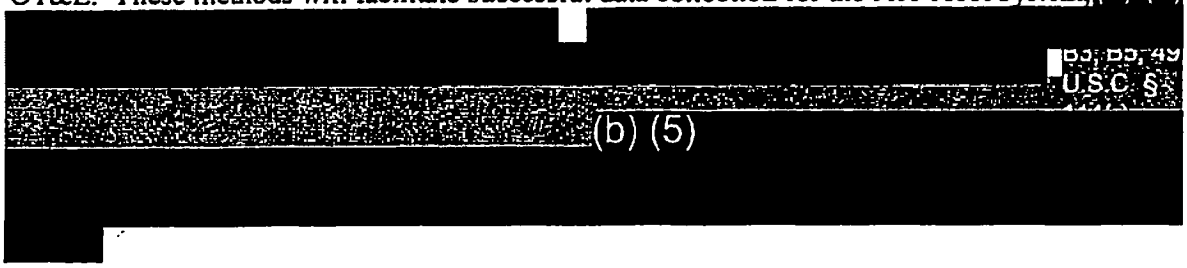


Table 2-1: Data Collection Methods

Methodology	Description	Expected Sample Size (per vendor)
(b) (5)	(b) (5) B3; 49 U.S.C. § 114(r)	(b) (5)
	(b) (5)	

Methodology	Description	Expected Sample Size (per vendor)
(b) (5)		

B3, B5, 49 U.S.C. § 114(r)

2.3 Schedule of Major Events or Phases

Table 2-2 presents the detailed testing schedule for the AIT ATR OT&E.

Table 2-2: AIT ATR OT&E Schedule

Event	Start Date	End Date
(b) (5) B3, B5, 49 U.S.C. § 114(r)	B3, B5, 49 U.S.C. § 114(r)	
(b) (5)		

2.4 Operational Context

Testing will be conducted in an actual, operating airport checkpoint screening area. B3, B5, 49 U.S.C. § 114(r) TSOs will use normal, approved screening procedures as B3, 49 U.S.C. § 114(r)

2.5 Test Locations and Personnel

Testing will be conducted at three airports with one machine receiving the ATR software upgrade per airport. The AIT ATR systems will undergo a 36-day OT&E at checkpoint locations at the following airports:

- Ronald Reagan Washington National Airport (DCA)
- Hartsfield-Jackson Atlanta International Airport (ATL)
- McCarran International Airport (LAS)

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[redacted]

2.6 Access Control Procedures

The TSA AIT Test Director will coordinate control procedures for this test event. All persons who are interested in observing the OT&E must coordinate site access at least two business days prior to the desired visit date. This will allow time for the Test Director to ensure that TSOs and tester staff are aware of the visit and have time to support the visit. Access to data and test results will be managed by the Test Director as well.

2.6.1 Information Release

Daily situation reports will provide the status of testing and data collection. A Quick Look Report (QLR) will be provided mid-way through the test for the Test and Evaluation (T&E) Integrated Product Team (IPT). No data will be released outside of the DAG without written request and approval by the TSA OTA.

2.6.2 Burn-In Period

(b) (5)

[redacted]

2.6.3 Vendor Control

Vendors will not have routine access to the test sites once the burn-in period is over. Vendors will only visit a test site to conduct corrective maintenance on the units when dispatched by the test team.

2.6.4 Data Collection

Data collection by test team members will be monitored through daily review of collected data.

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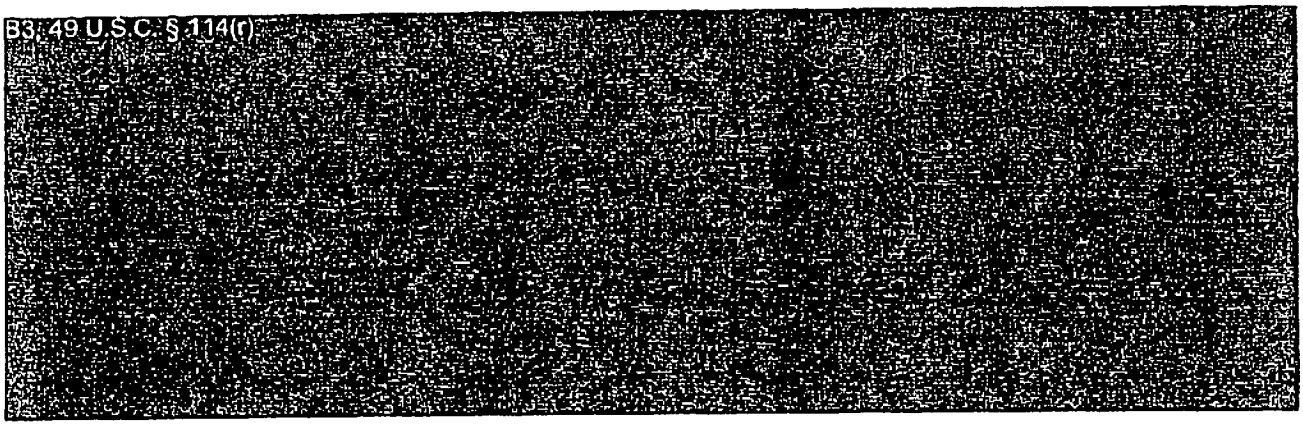
[redacted] Daily review of this data will ensure that any problems can be discovered and fixed prior to any large impact on sample size or test integrity.



2.9 Training Concept

All operators will receive system operation, SOP, and routine maintenance training prior to the start of testing. The vendor will provide the initial training on the operation of the equipment and the SOP training will be provided by headquarters OTT personnel. There will be classroom and hands-on portions of the training to ensure that the operators understand how to use the system, along with the applicable procedures for alarm resolution.

2.10 Environmental Impacts

No environmental impacts are expected as a result of the AIT ATR OT&E.

3.0 ANALYTIC DETAILS

3.1 Analytic Approach Overview

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(b) (5)

B3; B5; 49 U.S.C. § 114(r)

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Table 3-1: OT&E Requirements and Objectives

Critical Operational Issue (COI)/Additional Issue (AI)	Criterion/Measure	Source(s)
(b) (5)	B3, B5, 49 U.S.C. § 114(r)	
Associated Requirements/Objectives:		
B3, B5, 49 U.S.C. § 114(r)		
(b) (5)		

Critical Operational Issue (COI)/Additional Issue (AI)	Criterion/Measure	Source(s)
(b) (5)		
(b) (5)	(b) (5) B3, B5, 49 U.S.C. § 114(r)	(b) (5)

Associated Requirements/Objectives:

- (b) (5) B3, B5, 49 U.S.C. § 114(r)
- (b) (5) B3, B5, 49 U.S.C. § 114(r)

(b) (5)

Critical Operational Issue (COI)/Additional Issue (AI)	Criterion/Measure	Source(s)
(b) (5)		
B3; B5; 49 U.S.C. § 114(r)		
B3; B5; 49 U.S.C. § 114(r)		
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Critical Operational Issue (COI)/Additional Issue (AI)	Criterion/Measure	Source(s)
(b) (5)		
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Critical Operational Issue (COI)/Additional Issue (AI)	Criterion/Measure	Source(s)
B3: B5: 49 U.S.C. § 114(r)		
(b) (5)		

Critical Operational Issue (COI)/Additional Issue (AI)	Criterion/Measure	Source(s)
(b) (5)		
(b) (5) B3 B5	(b) (5)	
Associated Requirements/Objectives:		
B3 B5 49 U.S.C. § 114(r)		

Critical Operational Issue (COI)/Additional Issue (AI)	Criterion/Measure	Source(s)
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Critical Operational Issue (COI)/Additional Issue (AI)	Criterion/Measure	Source(s)
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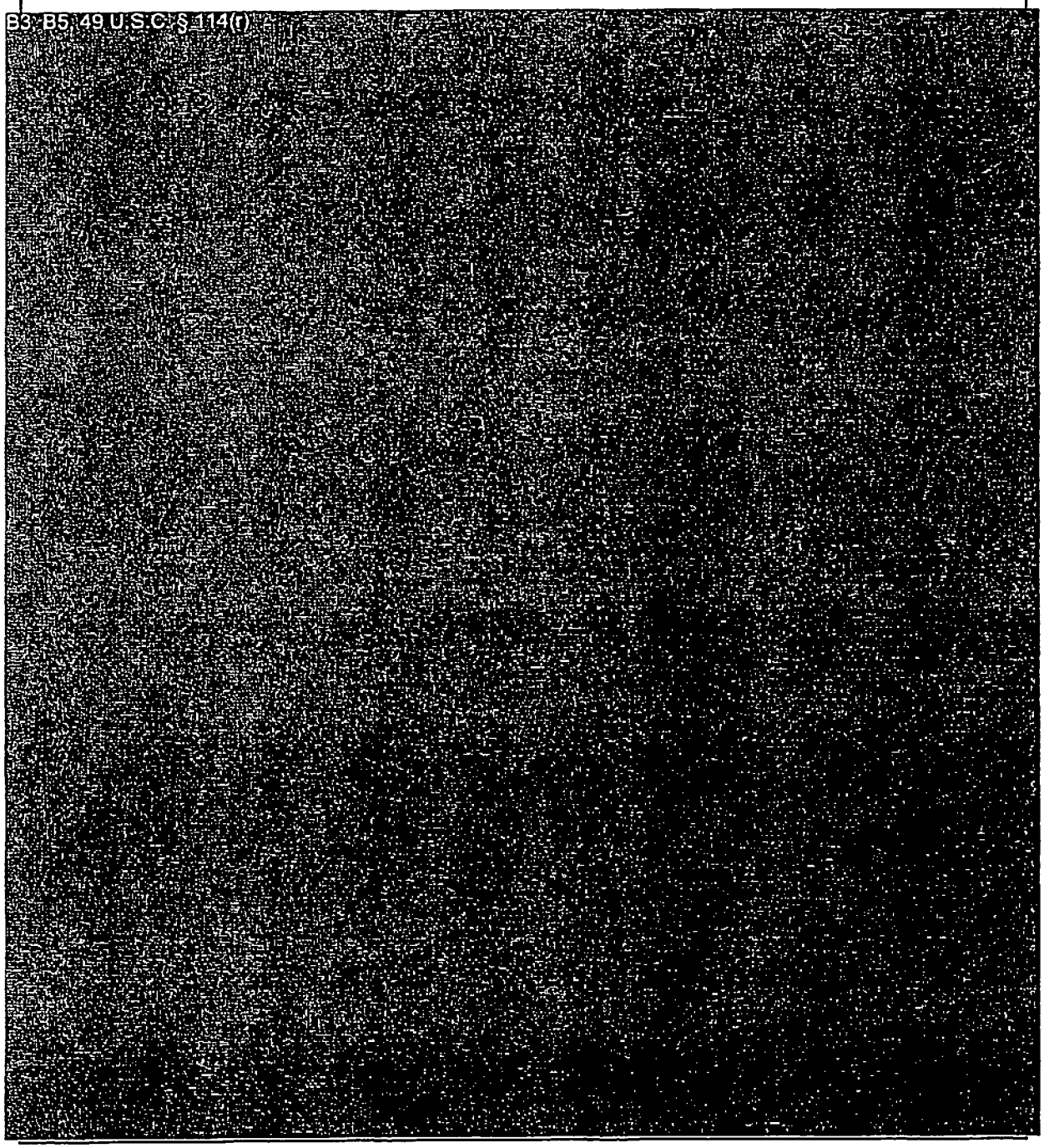

Critical Operational Issue (COI)/Additional Issue (AI)	Criterion/Measure	Source(s)
B3, B5, 49 U.S.C. § 114(r)		

Critical Operational Issue (COI)/Additional Issue (AI)	Criterion/Measure	Source(s)
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Critical Operational Issue (COI)/Additional Issue (AI)	Criterion/Measure	Source(s)
B3; B5; 49 U.S.C. § 114(r)		
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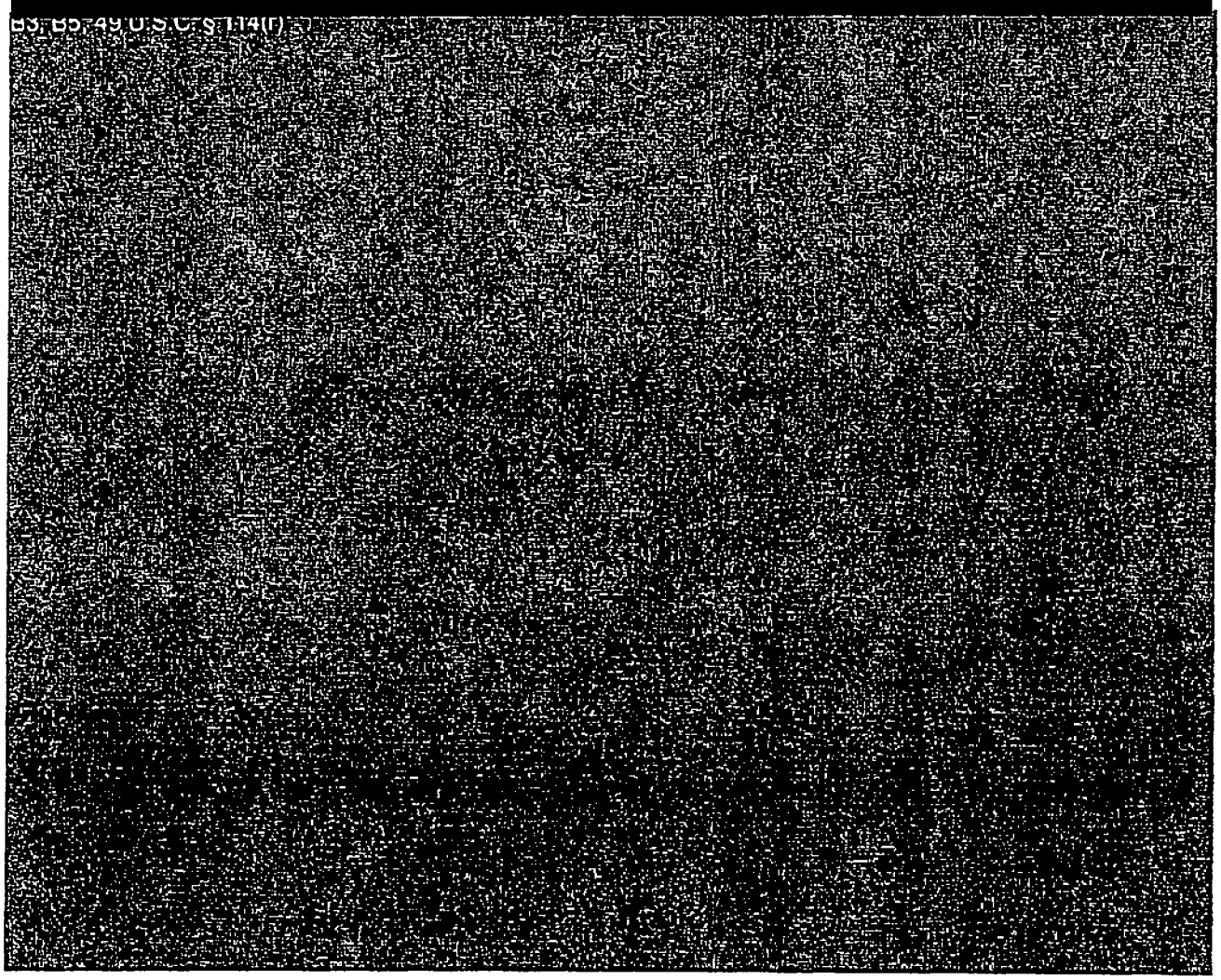
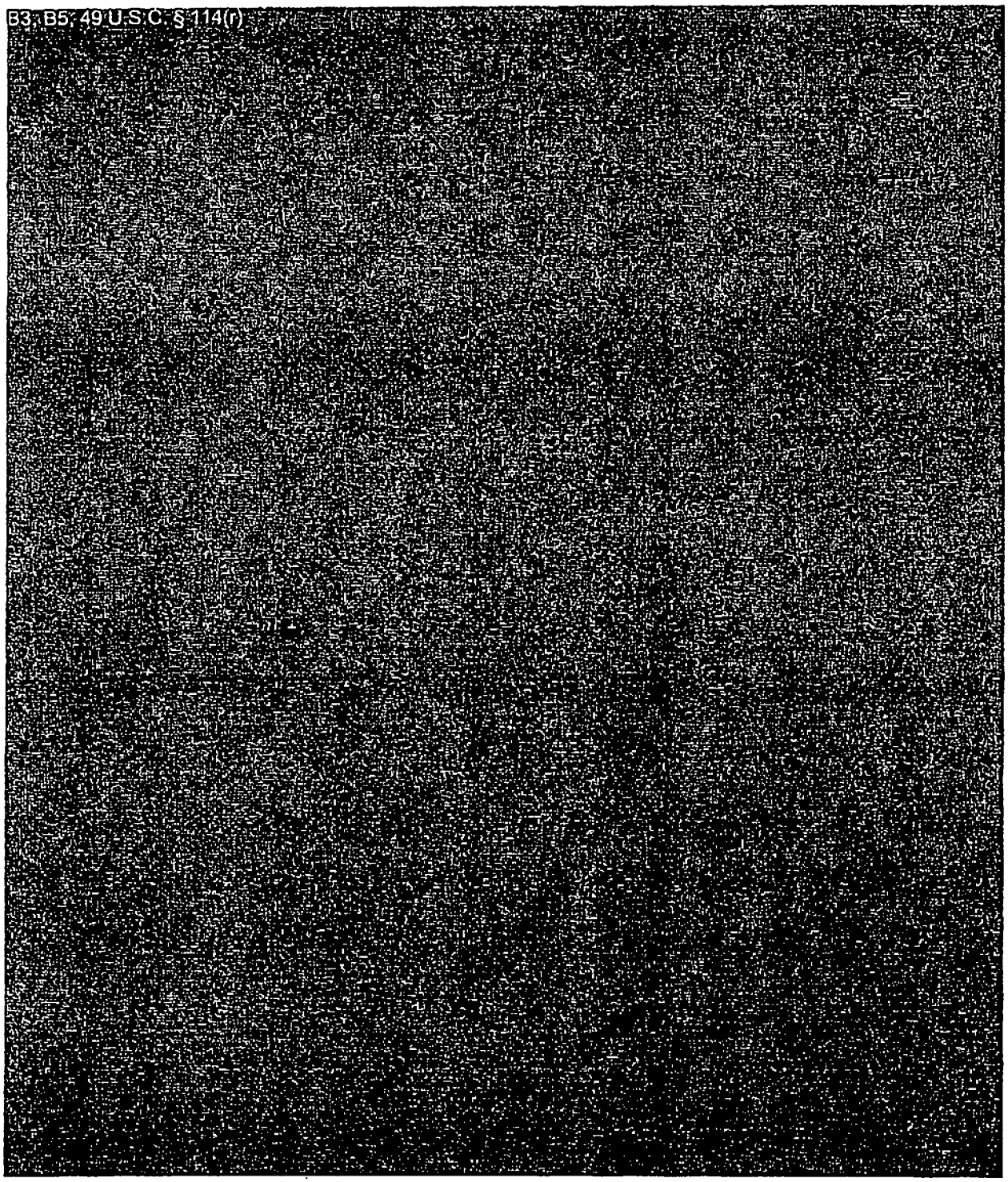
B3; B5; 49 U.S.C. § 114(r)





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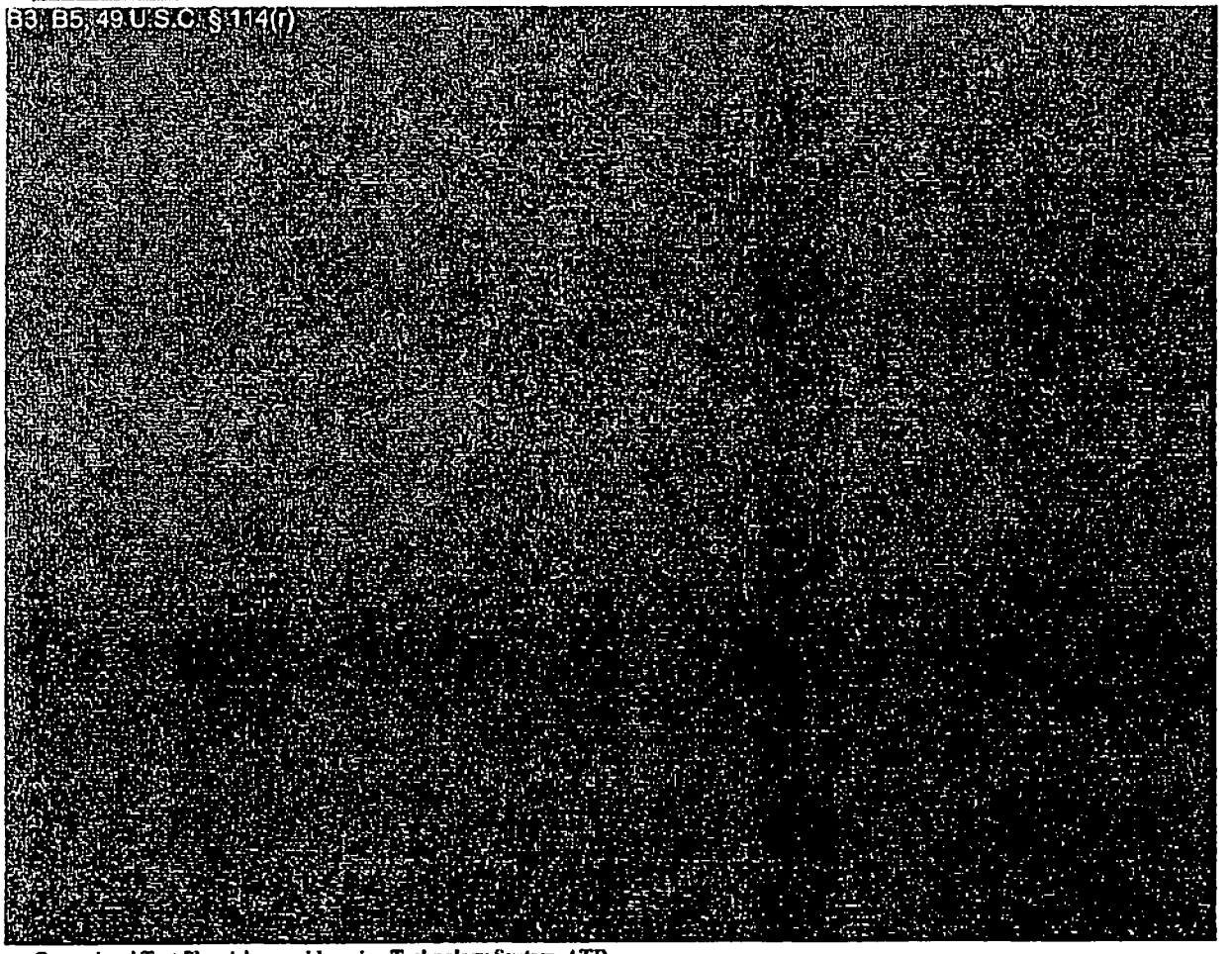

Operational Test Plan Advanced Imaging Technology System, ATR

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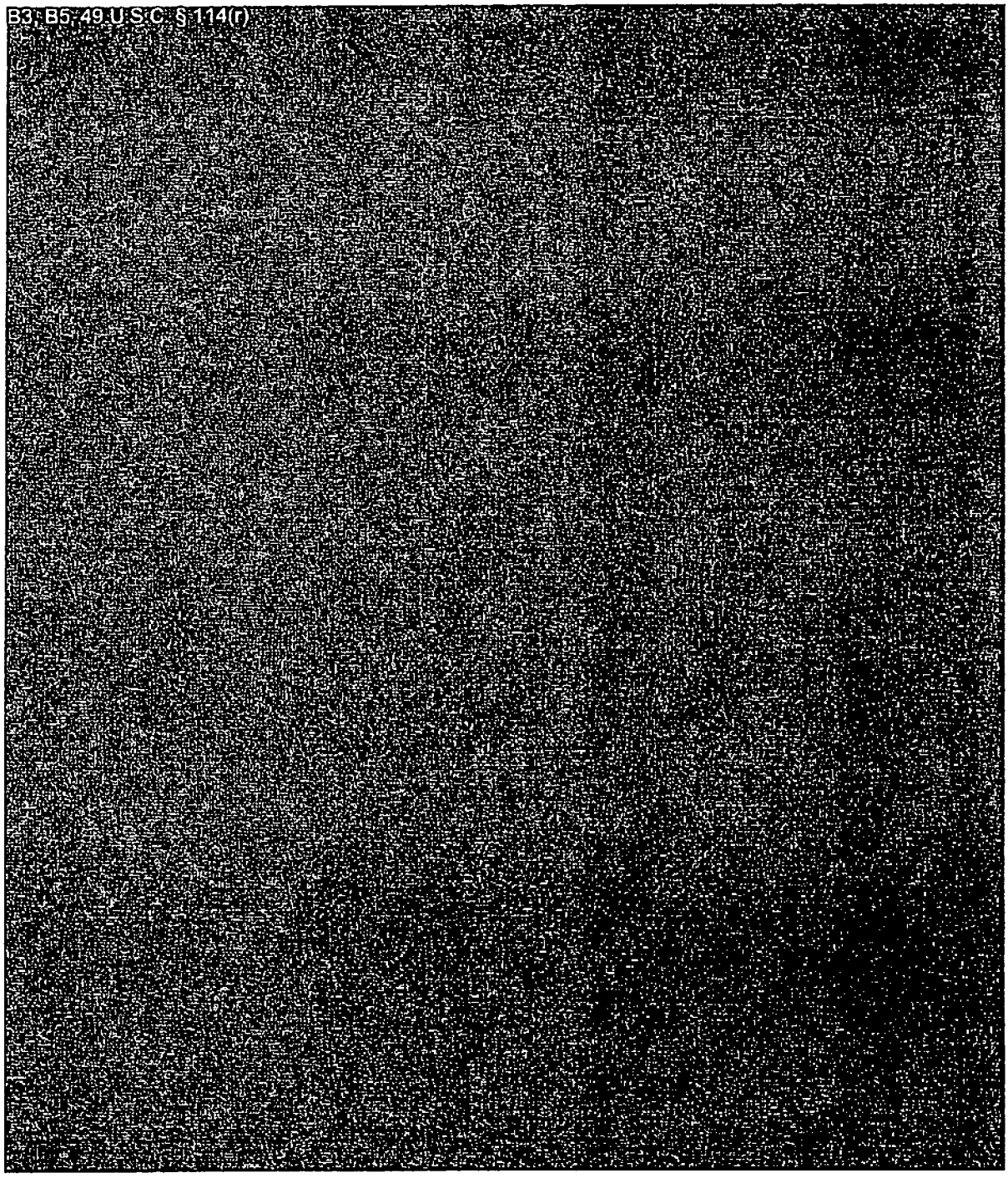

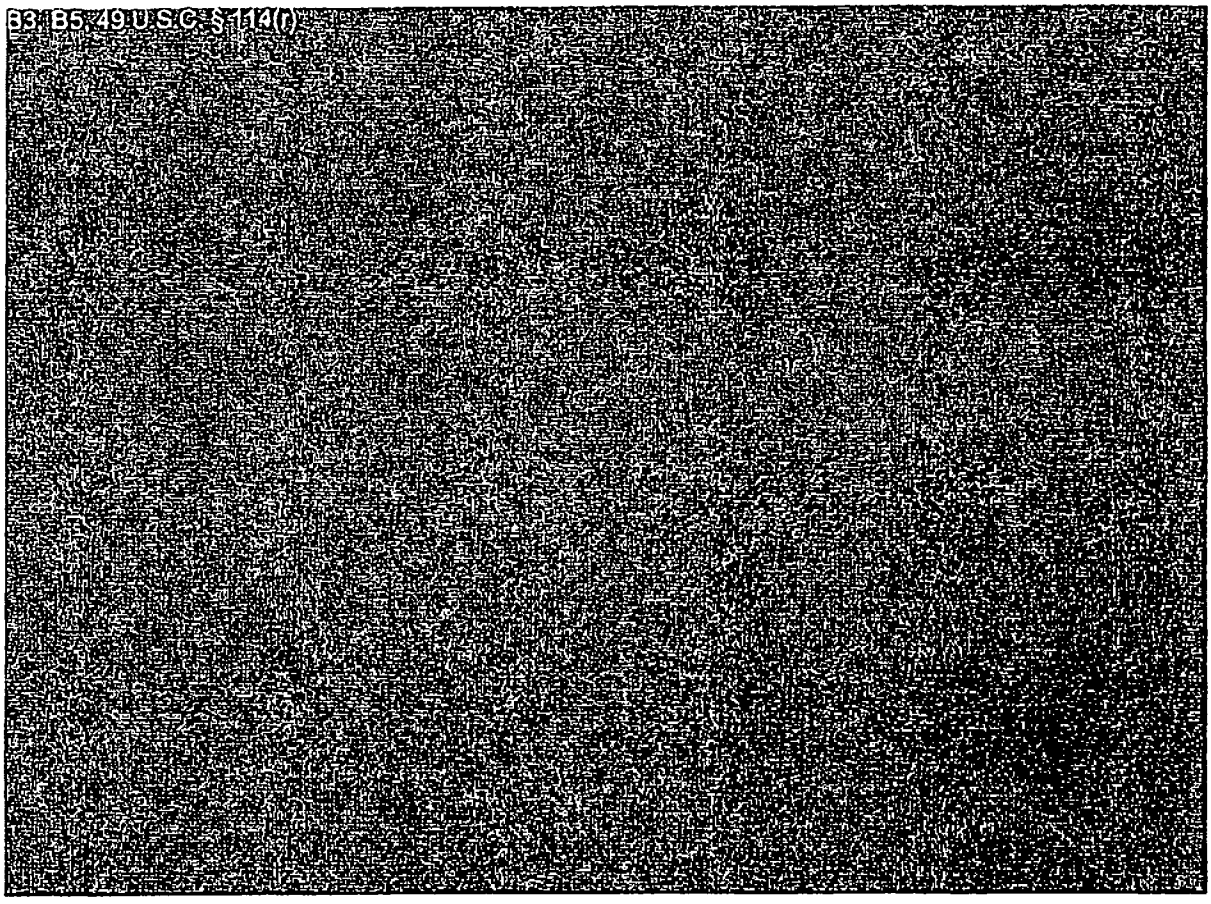

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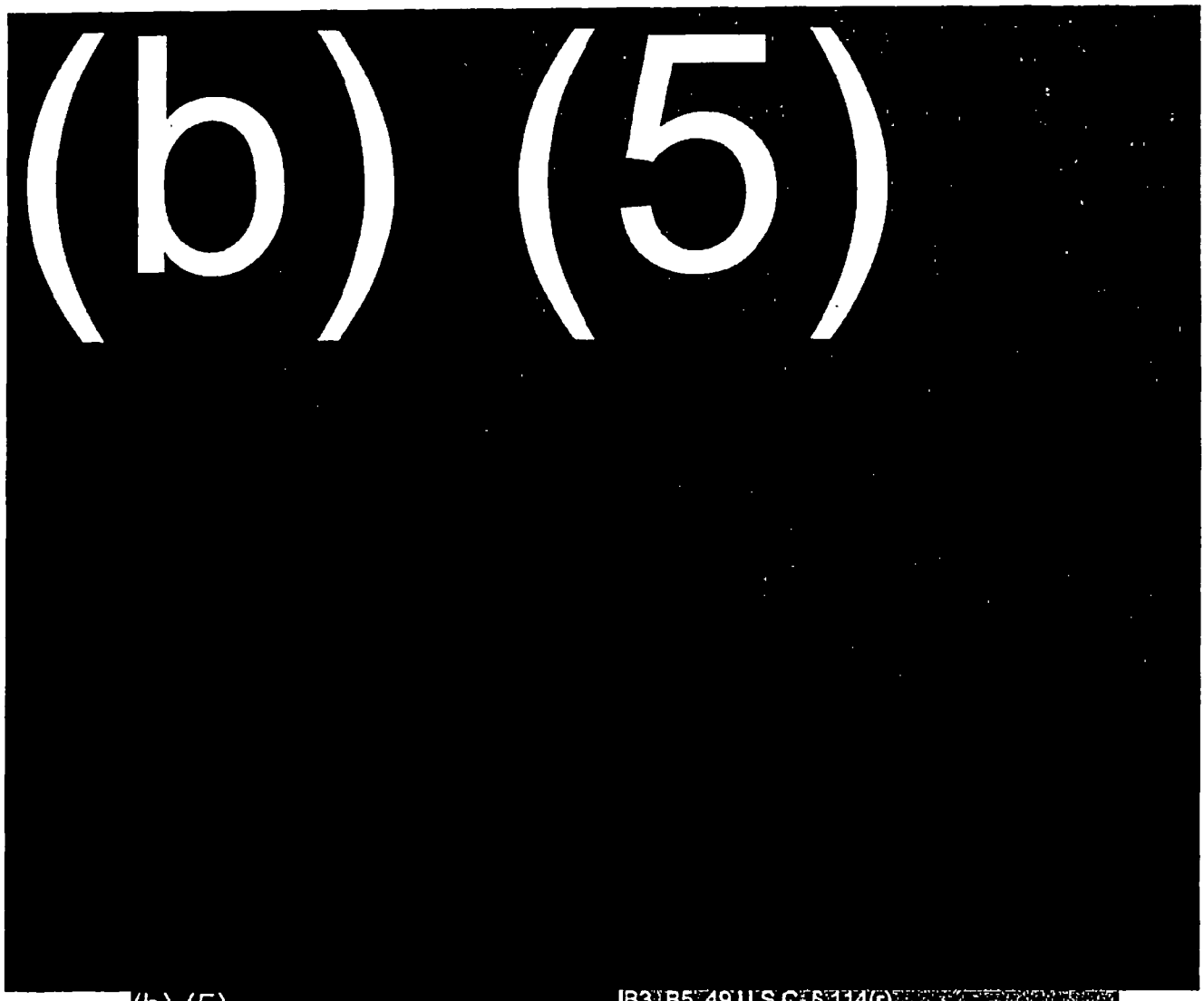

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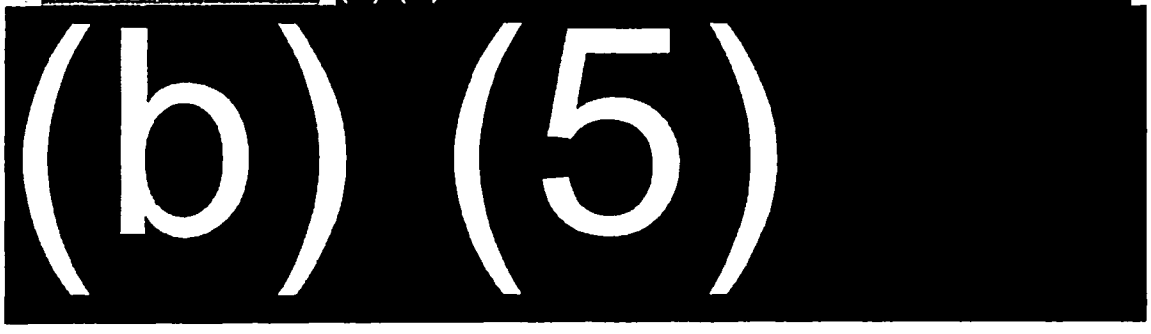

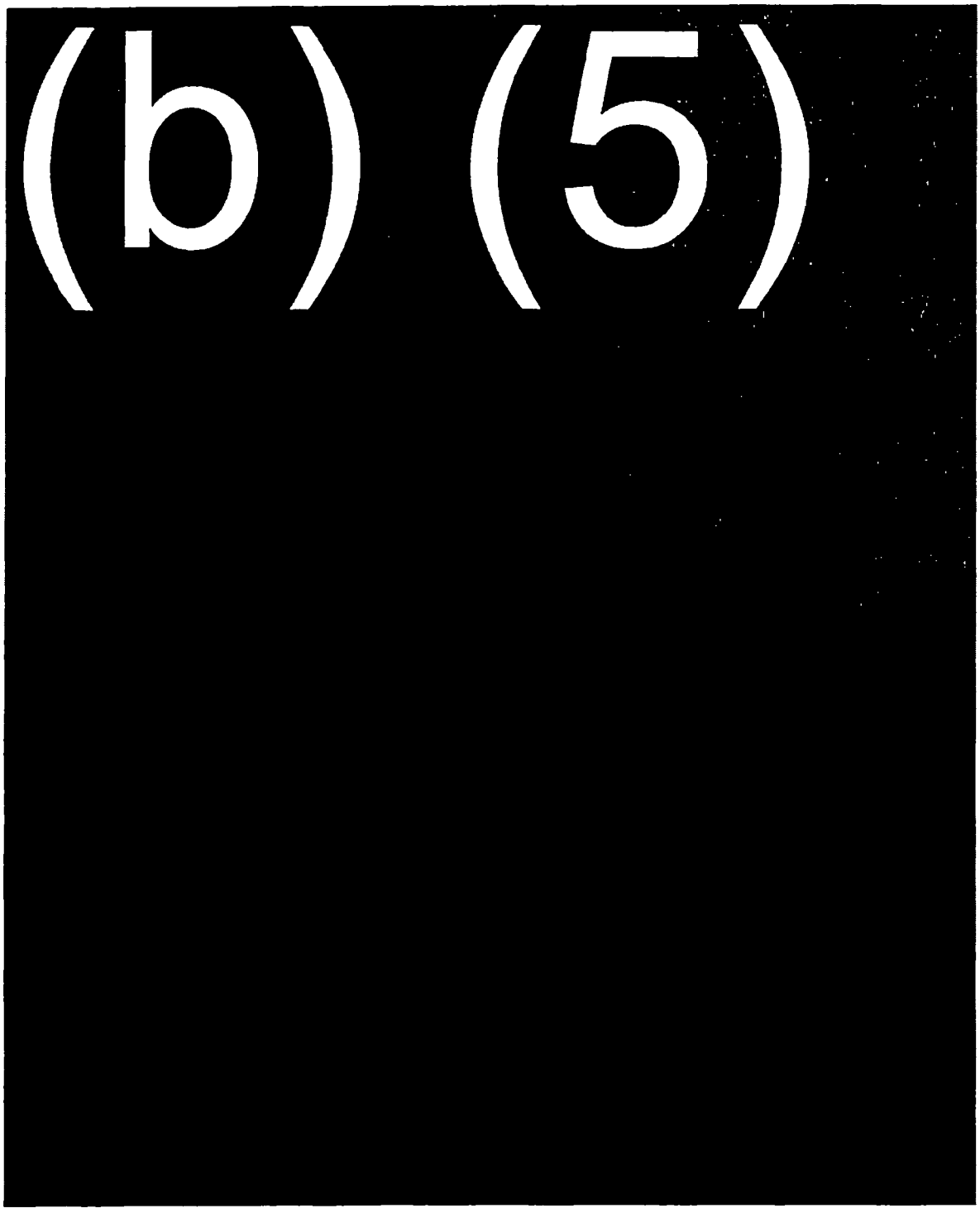

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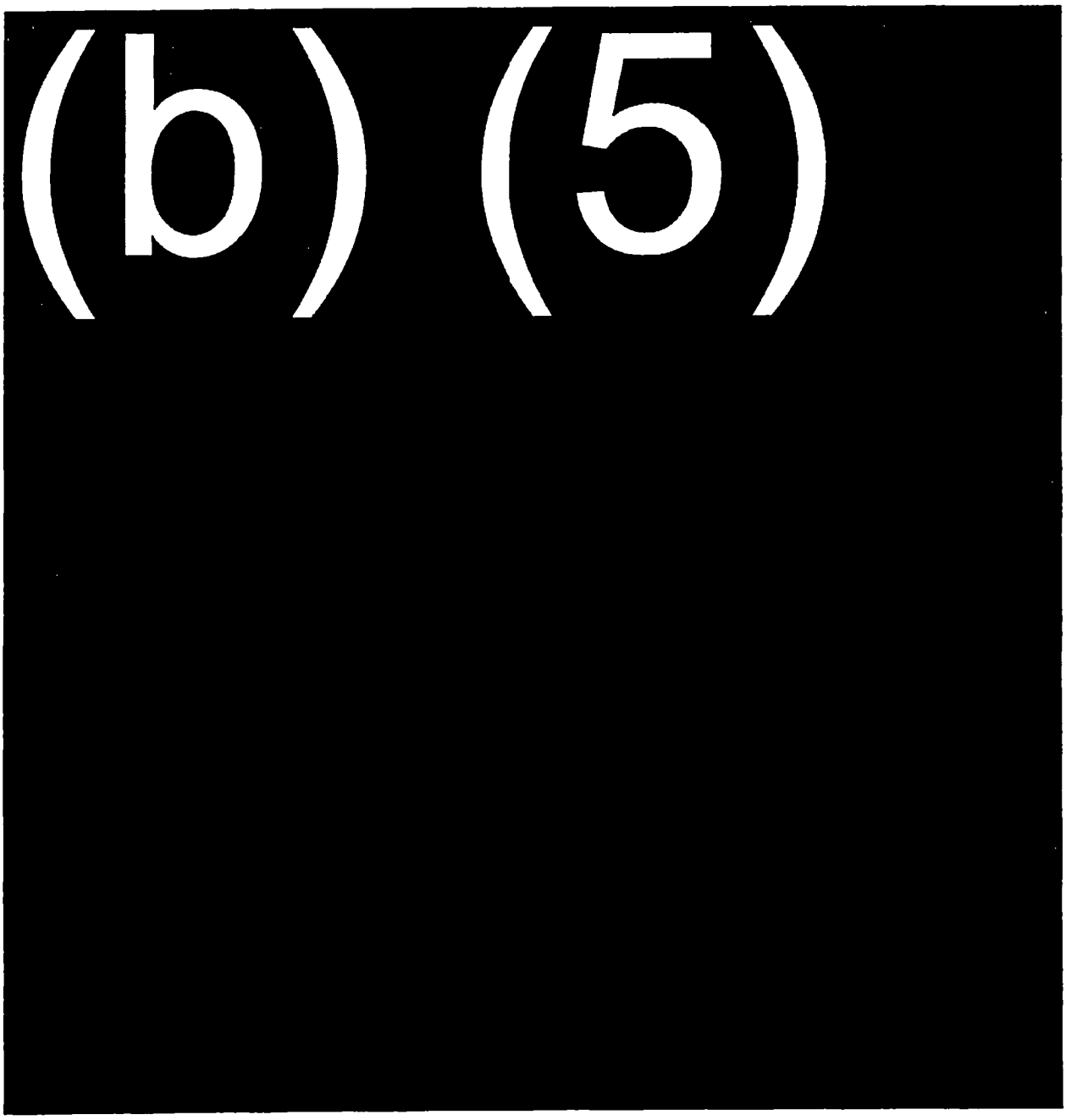

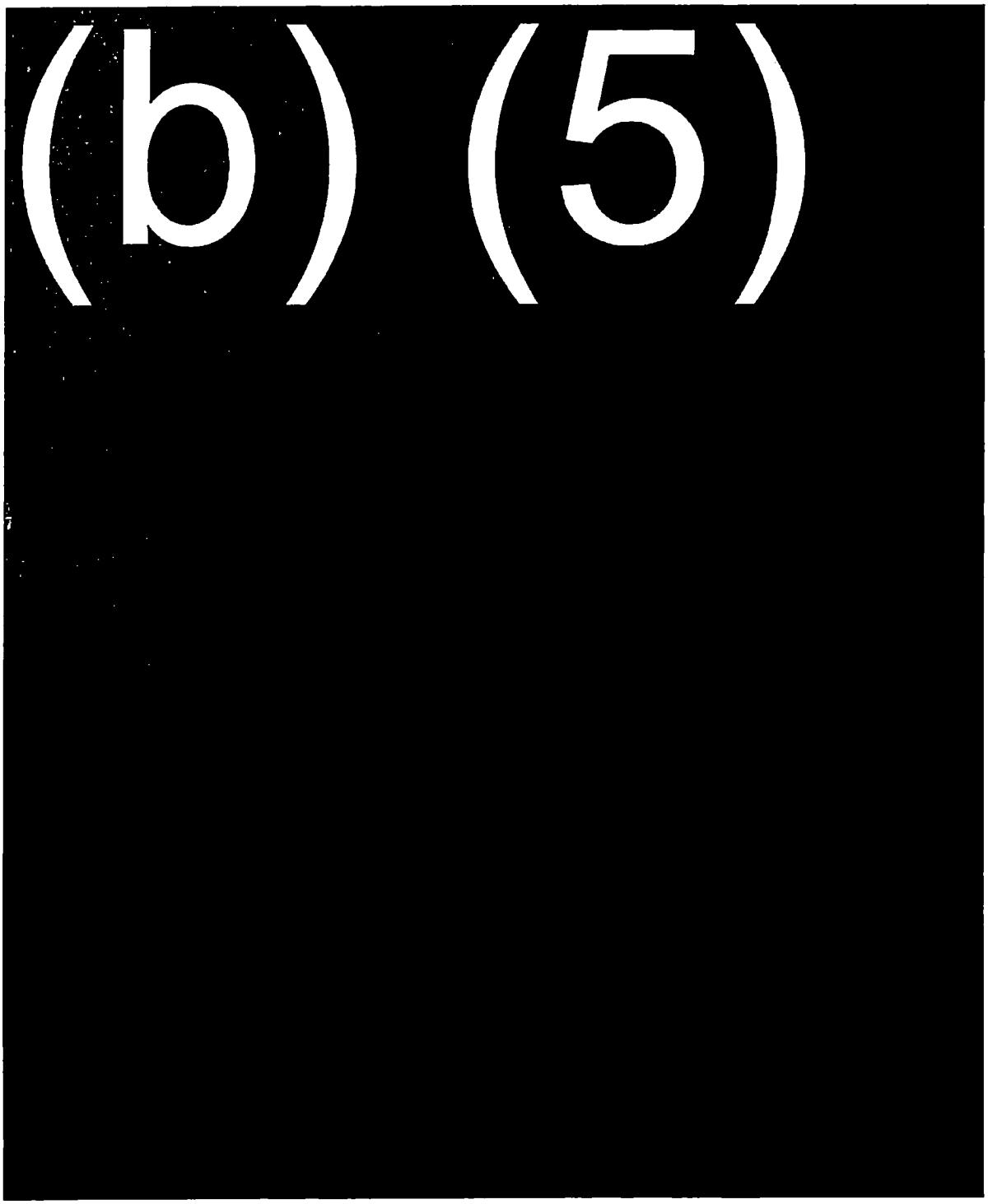

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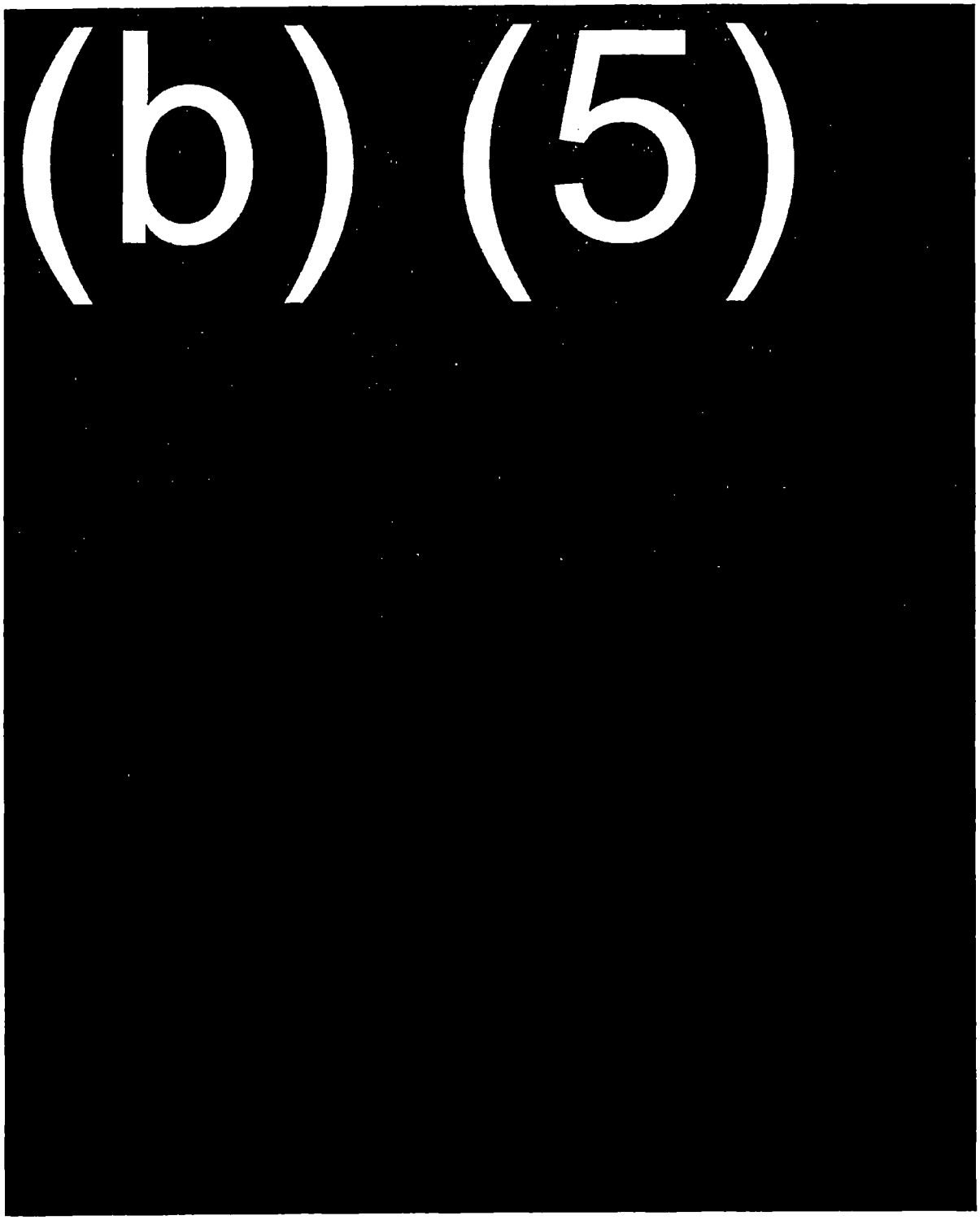

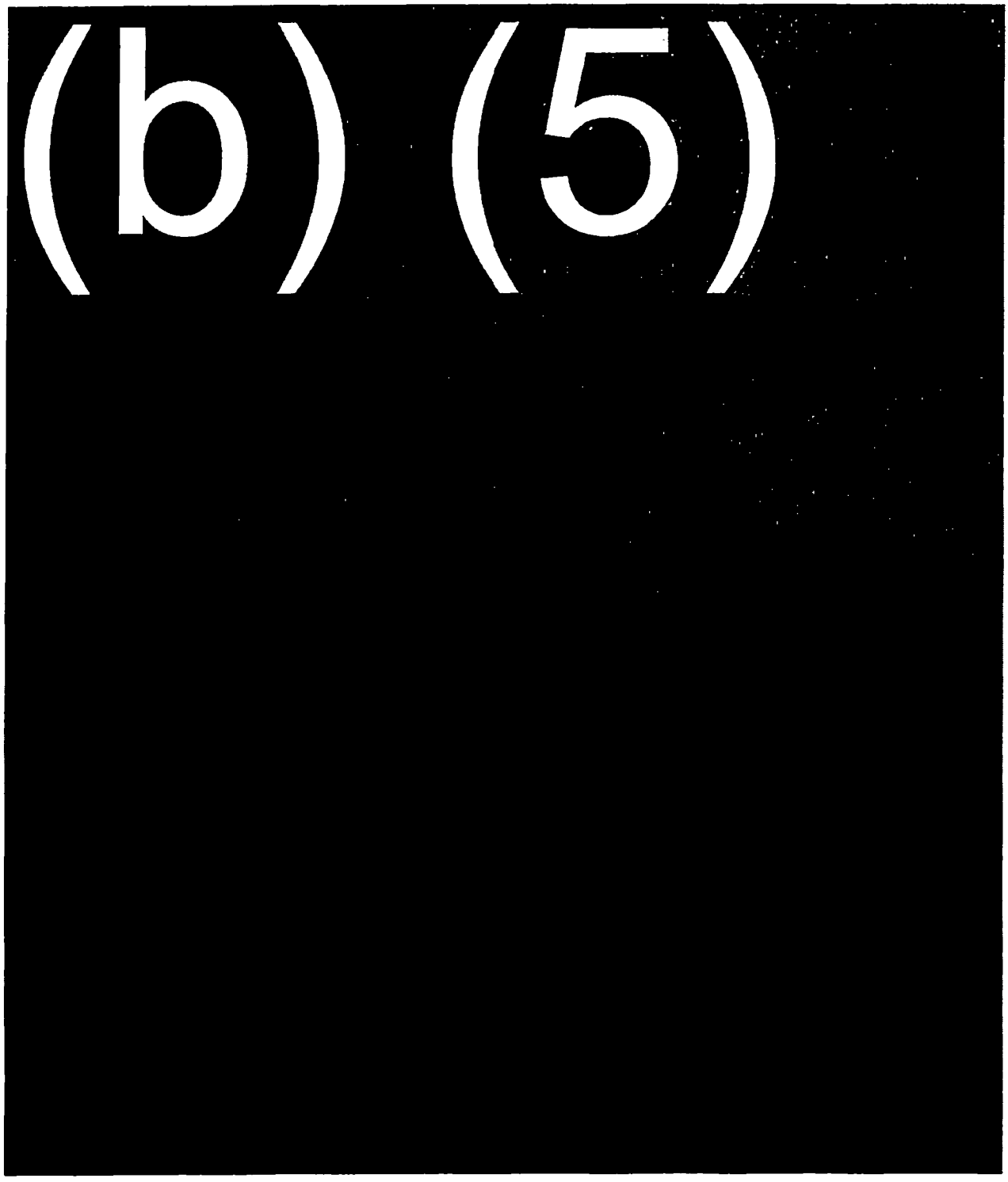

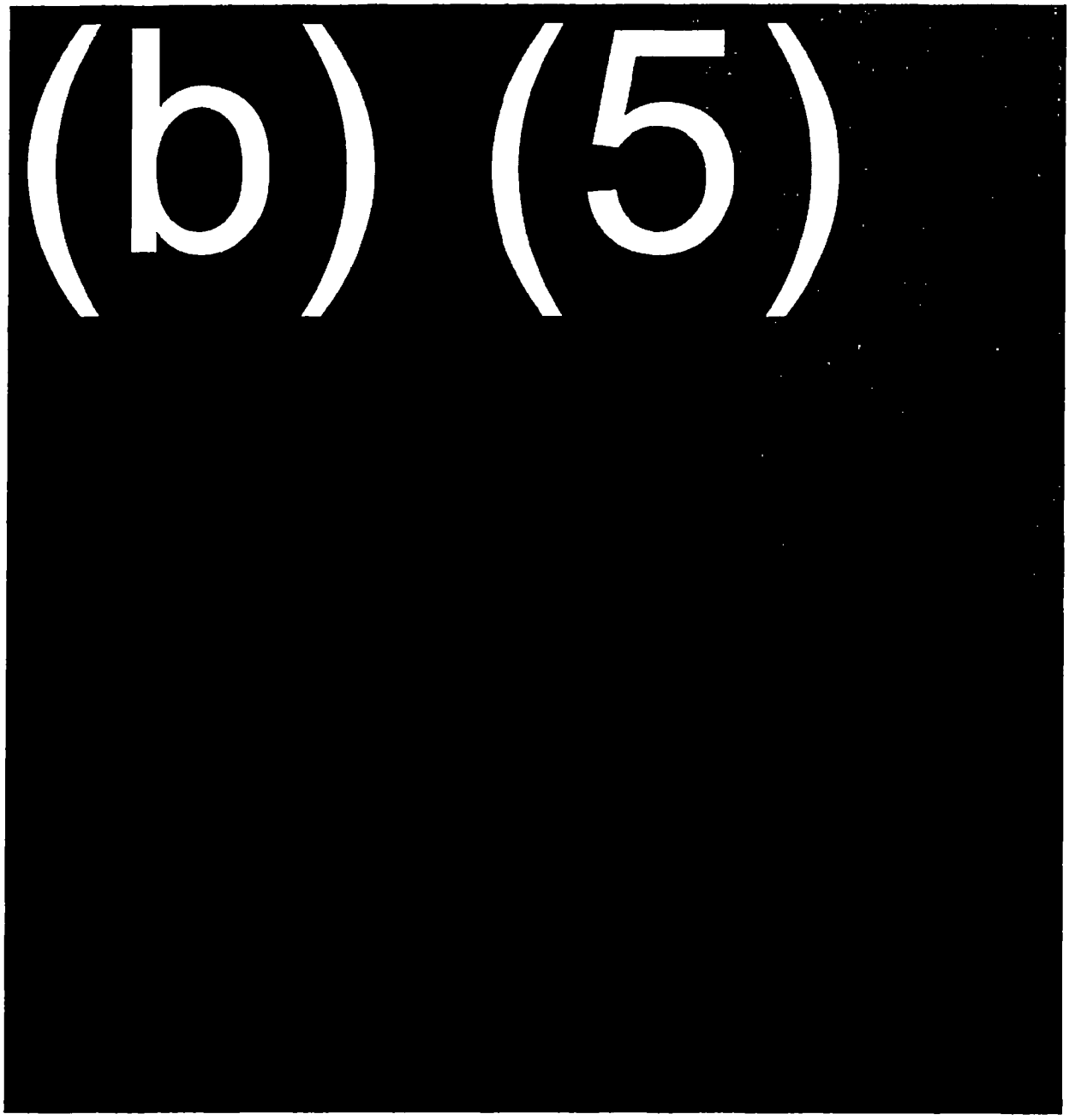

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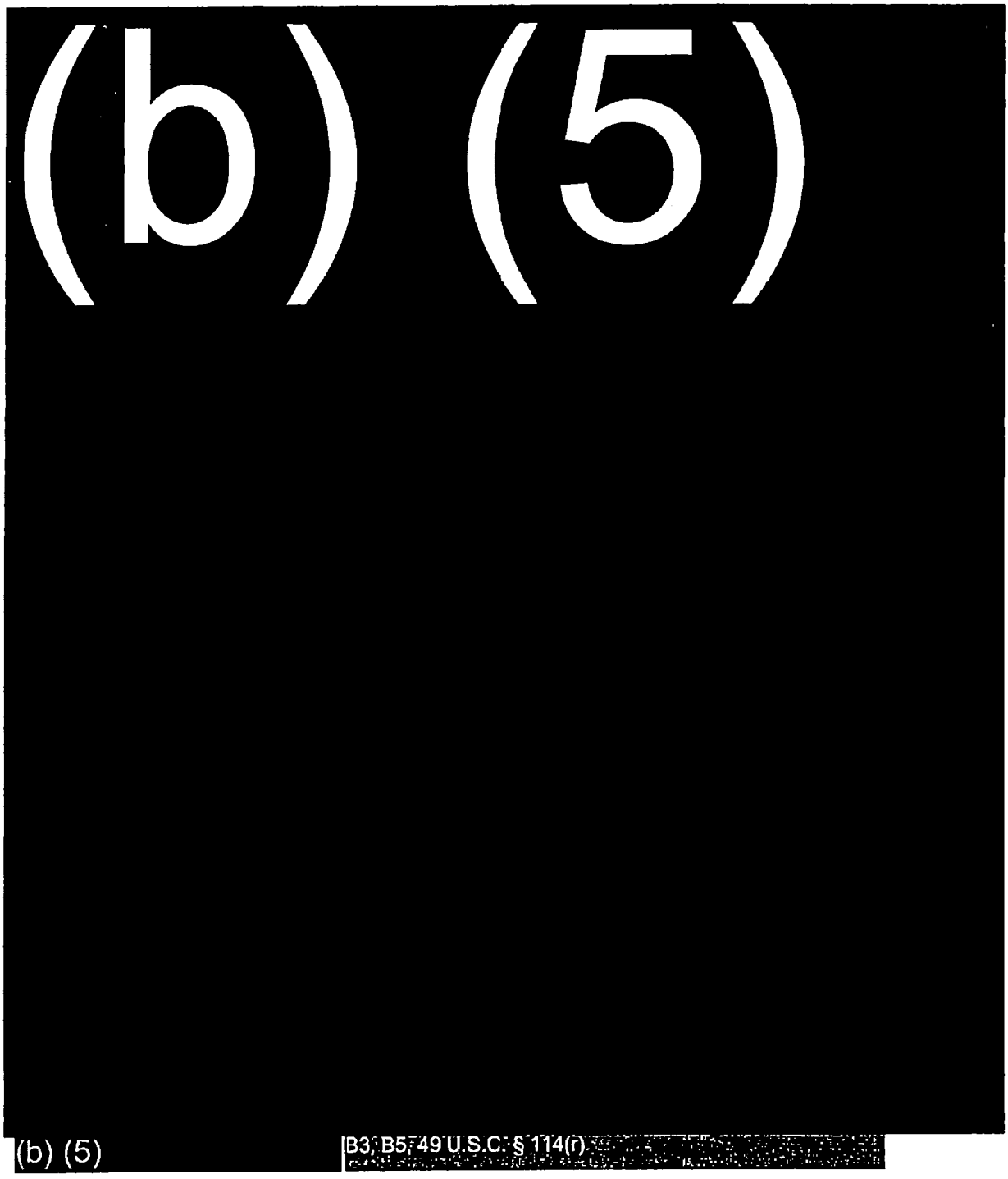

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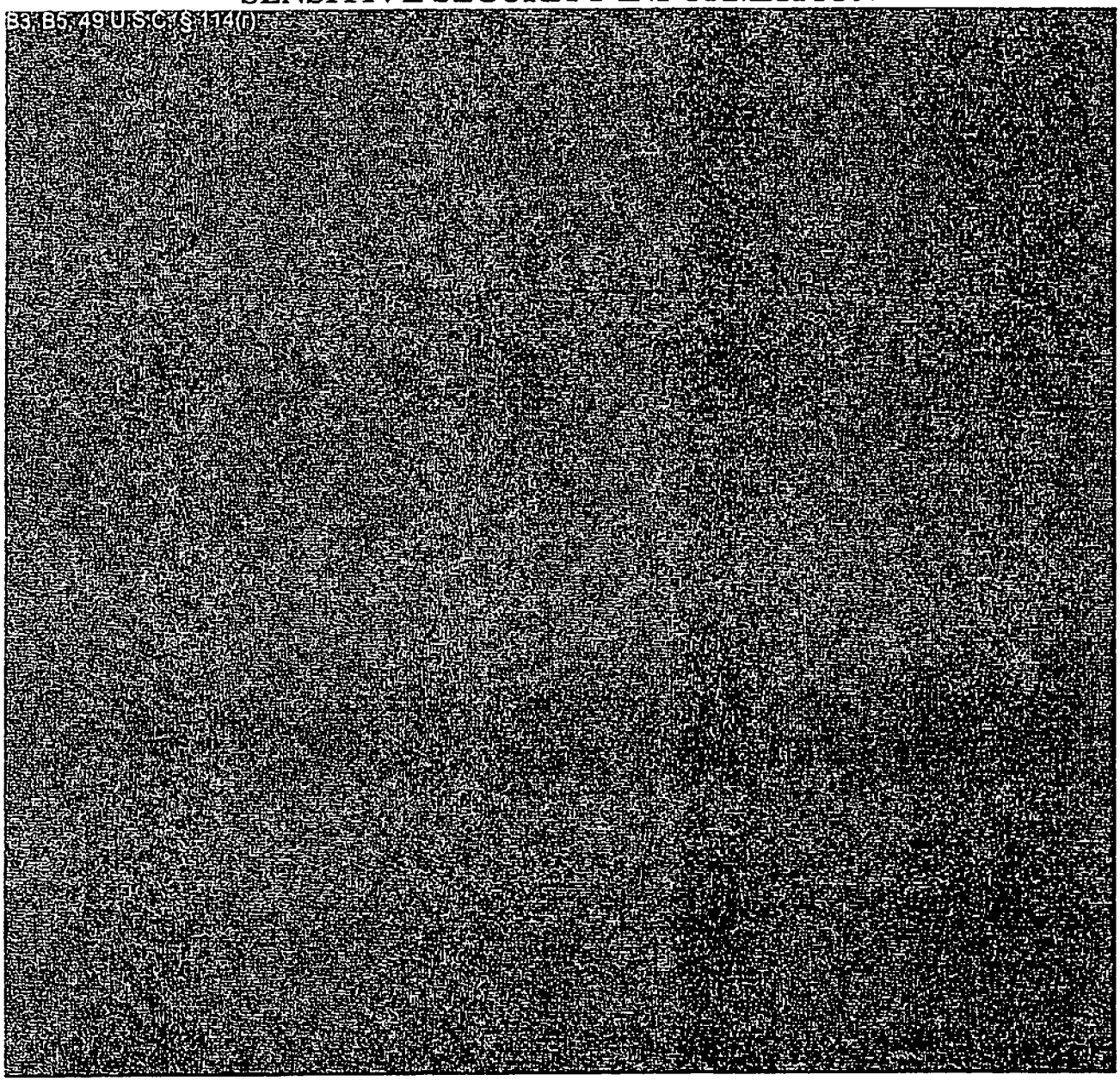

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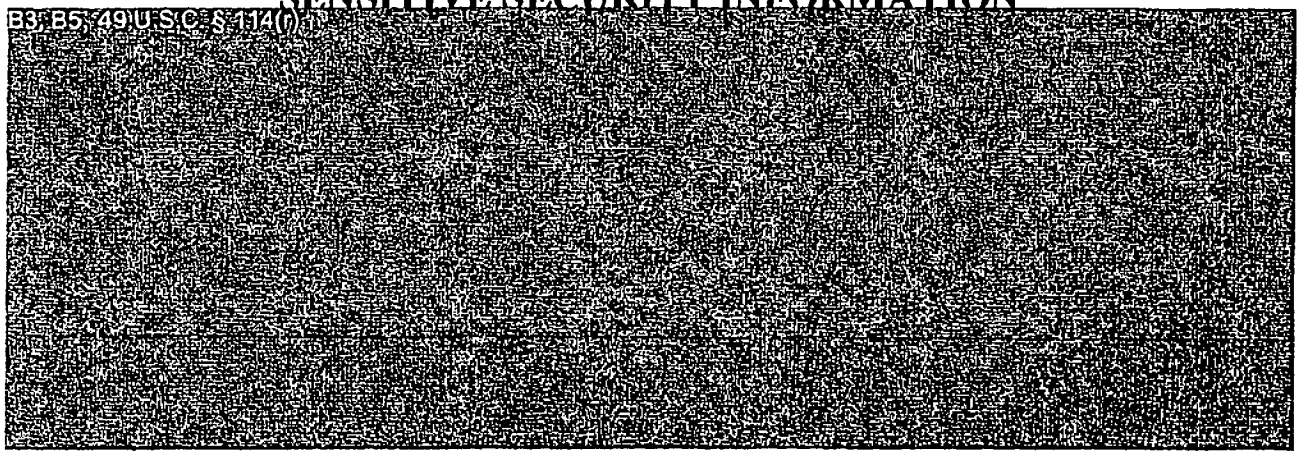

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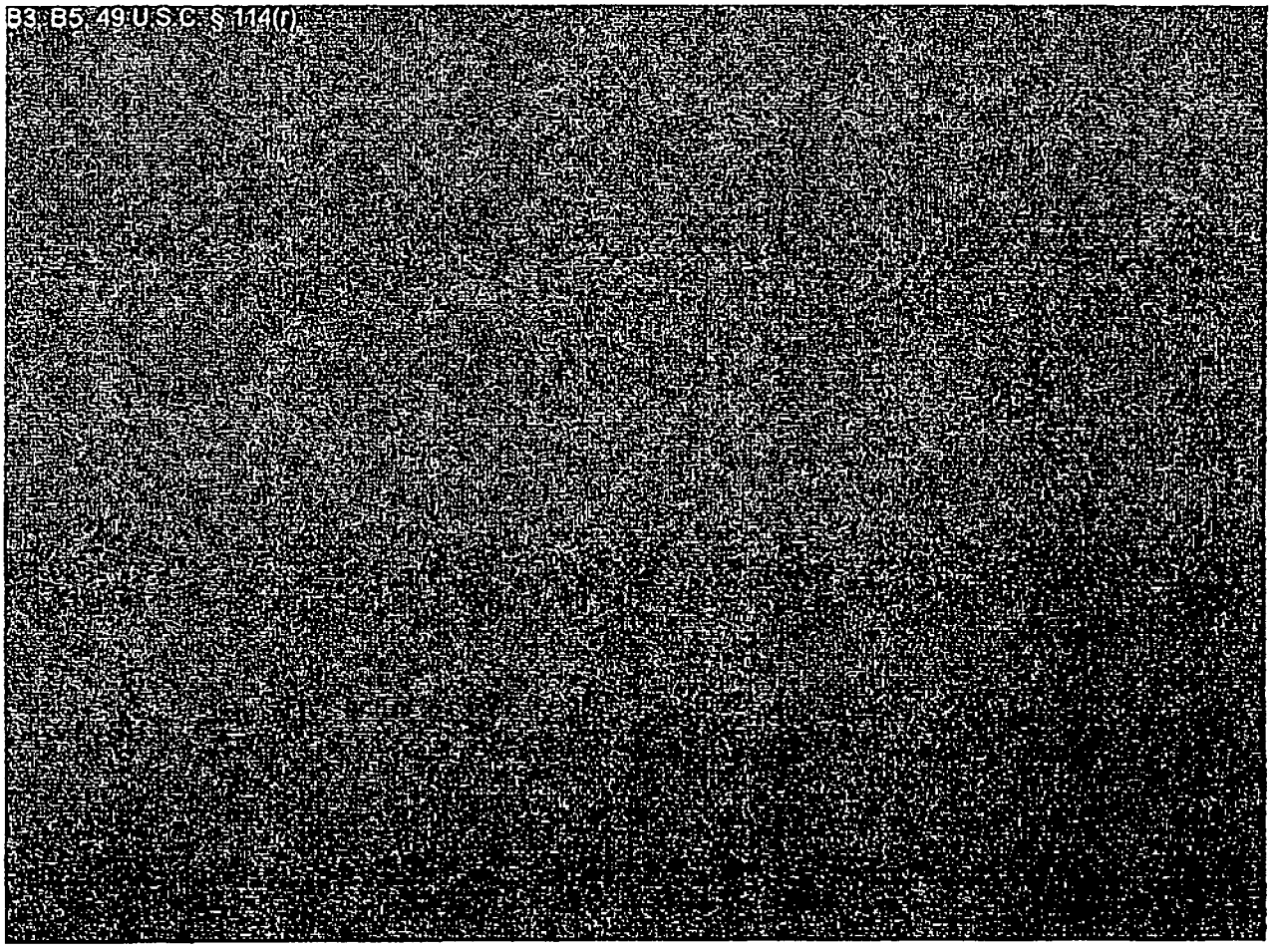

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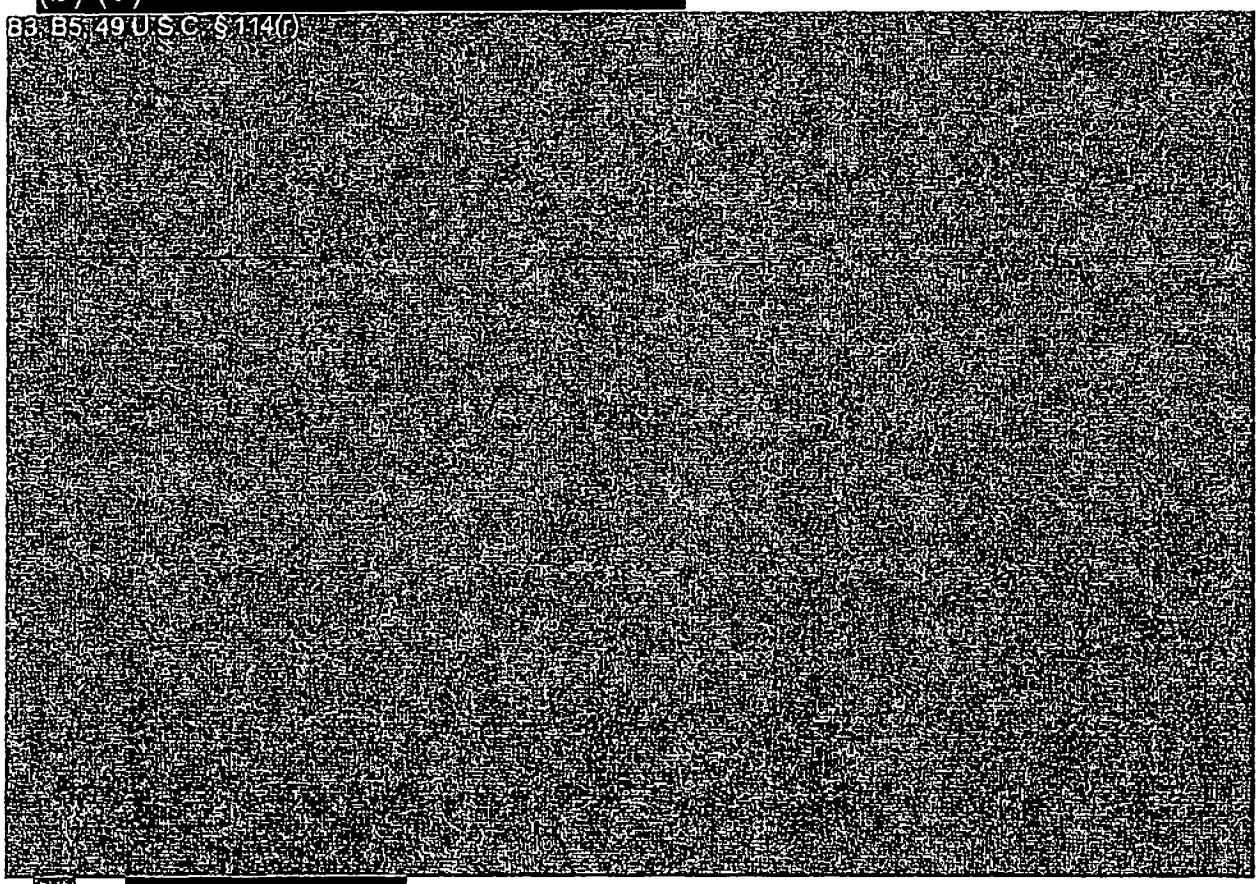

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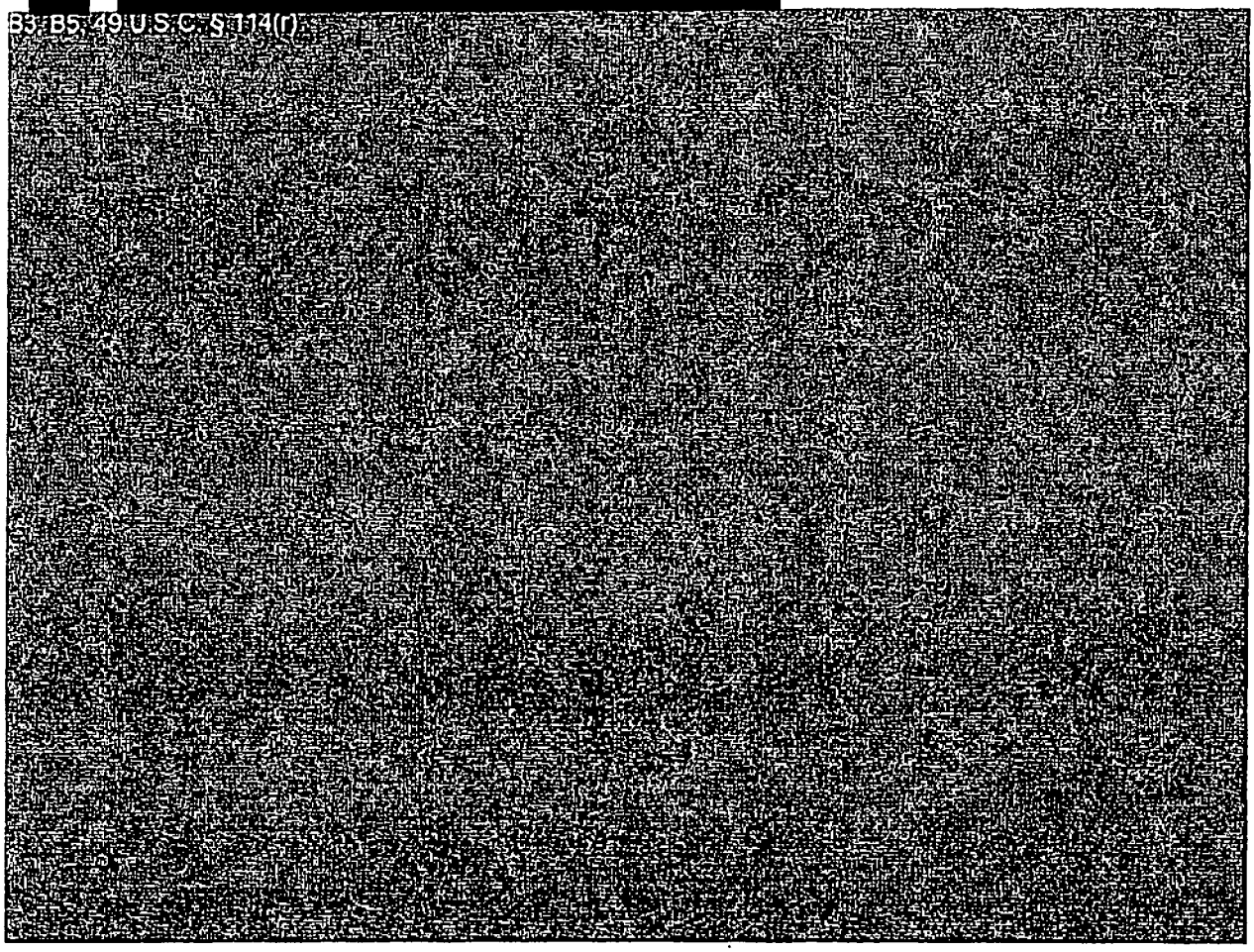
(b) (5) [redacted]

B3 B5 49 U.S.C. § 114(r) [redacted]



4.0 DATA MANAGEMENT

4.1 Overview

This section presents information on data collection and reduction. Specifically, the data collection and reduction organizations and procedures are presented. In general, data collection will be accomplished using either electronic data collection forms hosted on handheld electronic devices, or via download of the AIT ATR equipment.

4.1.1 Data Collection Organization and Procedures

The test team will consist of personnel experienced in data collection and reduction. The team members will receive training on all applicable data collections forms either during pilot testing or prior to their arrival at the test site. The key person supporting field operations will be the test leader. The test leader will work closely with, and report to, the lead analyst for this OT&E. Additional tester personnel will be deployed as needed to support operations at the test site. Data will be transmitted to the test database on a daily basis.

The critical piece of support equipment for this OT&E effort will be the ICAD. The ICAD is a hand-held electronic device that allows for easy collection of interview, process, and performance data. The ICAD allows for centrally-controlled form updates in near real time. This allows the ability to change forms to meet emerging requests in near real time. When a form change or new data element is required, TASC will revise the form and transmit it to each ICAD user in the field. This can typically be accomplished within 1 hour of TSA request. Figure 4-1 presents an ICAD at its main menu screen.

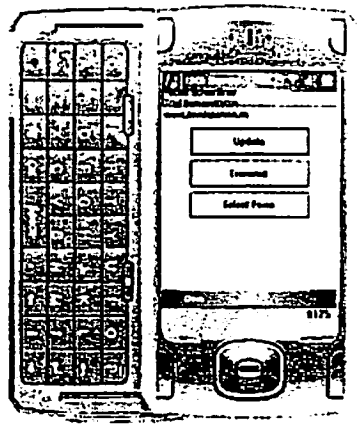


Figure 4-1: The ICAD

There will be several data collection forms used to complete the OT&E effort. These forms will be stored on the ICAD. The ICAD forms are provided in Appendix C. Table 4-1 provides a summary of each form.

Table 4-1: Data Collection Forms

Name of Form	Description
AIT ATR Throughput	Data collection form to be used to support data collection of process elements and supporting data while TSOs screen items with the AIT system.
AIT ATR Node Throughput - Pre	Data collection form to be used to support collection of bypass rates, opt out rates, and percentage of passengers that can be screened.
AIT ATR Node Throughput - Post	Data collection form to be used to support the collection throughput, secondary screening rates.
B3 49 U.S.C. § 114(r)	
AIT ATR Maintenance Checklist	Checklist to support assessment of AIT maintenance requirements.
AIT ATR TSO Interview	Interview to be given to TSOs to ascertain their opinions on the equipment.
AIT ATR TSA Leader Interview	Checklist completed by TSA airport leadership to ascertain their opinions on the equipment.

4.1.2 Data Reduction Organization and Procedures

All data collected electronically via ICADs will be exported off of the ICAD and into Extensible Markup Language (XML) format, where it will be appended to existing database tables using automated scripts. Each ICAD record contains a unique identifier to prevent duplication of records in the database. Backend database queries and programs will then be applied to all records to check for bad records/fields, and a suggested Data Authentication Group (DAG) score will be generated in a separate field for each record.

4.1.3 Critical Data Process Description

Data will be processed on a daily basis to support daily review and trend analysis. The data will be flagged and annotated as necessary to support the weekly DAG meetings. Upon DAG authentication, the evaluator will begin analysis of the authenticated data.

4.2 Data Authentication Group (DAG)

The TSA AIT ATR Evaluator will conduct a DAG with key TSA personnel once a week. The mission of the AIT ATR DAG will be to review data collected during the OT&E and authenticate the data. Data authentication consists of making the judgment that the data are representative of system performance within the operation environment employed during OT&E, and that the data were properly collected and reduced as presented to the DAG. (b) (5)

The AIT ATR Evaluator will have control over all data. Data will not be released, nor test results disseminated, without the prior written permission of the AIT ATR Evaluator. The output of the DAG is an authenticated database for use in computing measures for the evaluation of MOPs, criteria, and COIs. Appendix F provides the SOP for the AIT ATR DAG.

4.2.1 DAG Personnel

Table 4-2 lists the DAG personnel.

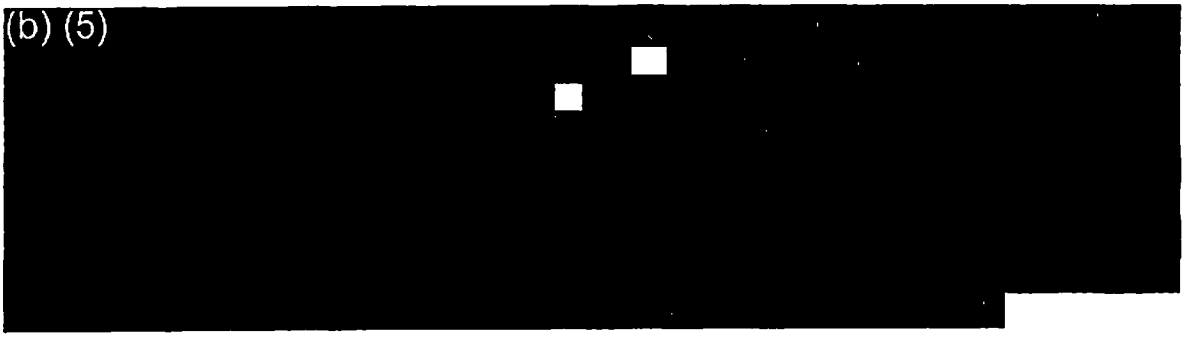
Table 4-2: DAG Personnel

Test Role	DAG Role
AIT ATR Evaluator	DAG Chair
Operations Representative	Data Reviewer
Program Office Representative	Participant
Lead Tester	Information Contributor
Lead Analyst	Data Management Lead

4.2.2 DAG Standard Operating Procedures

At each DAG meeting, the lead analyst will present all records collected since the previous DAG meeting, along with any unscored records from the previous DAG meeting. Records will be provided electronically or in paper format when necessary and will also include any issues discovered via manual or automatic verification and validation processes. The members of the DAG will review the records and provide each record with a score per the scoring criteria provided in Section 4.4.3. Whenever a consensus between the DAG members cannot be reached, the DAG chair will determine the DAG score. Any questions about the data collection records will be asked to the lead tester, who will either answer the question or provide the answer during the next DAG meeting. In cases where causality of failures and/or TIRs cannot be resolved within the DAG, the Chair (or designee) may reach out to SMEs, such as Engineering, the Office of Security Operations, etc., to clarify the incident and present findings to the DAG.

4.2.3 DAG Scoring Criteria

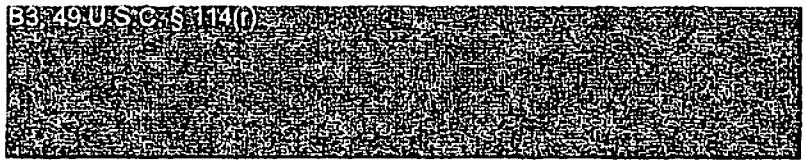


5.0 ACRONYMS AND ABBREVIATIONS

AI	Additional Issue
Ao	Operational Availability
AIT	Advanced Imaging Technology
ATL	Hartsfield-Jackson Atlanta International Airport
ATR	Automatic Target Recognition
ARB	Acquisition Review Board
BCM	Baseline Correlation Matrix
BIT	Built-In Test
CF	Critical Failure
CFR	Code of Federal Regulations
COI	Critical Operational Issue
CONOPS	Concept of Operations
DAG	Data Authentication Group
DCA	Ronald Reagan Washington National Airport
DHS	Department of Homeland Security
DO	Divestiture Transportation Security Officer (TSO)
EMD	Enhanced Metal Detector
[redacted]	[redacted]

FIT	Fault Isolation Test
FRD	Functional Requirements Document
GED	General Educational Development
HFE	Human Factors Engineering
HHMD	Hand-Held Metal Detector
HSI	Human-Systems Integration
ICAD	Information Collection Adaptive Device
IO	Image Operator
IPT	Integrated Product Team
KPP	Key Performance Parameter
LAS	McCarran International Airport
M&S	Modeling and Simulation
MMW	Millimeter Wave
MOP	Measure of Performance
MTBCF	Mean Time Between Critical Failures
NCF	Non-Critical Failure
ORD	Operational Requirements Document
OSO	Office of Security Operations
OT	Operational Test

OT&E	Operational Test and Evaluation
OTK	Operational Test Kit
OTP	Operational Test Plan
OTT	Office of Technology Training
Pfa	Probability of False Alarm
PS	Procurement Specification
QC	Quality Control
QLR	Quick Look Report
QT&E	Qualification Test and Evaluation
RCM	Requirements Crosswalk Matrix
RMA	Reliability, Maintainability, and Availability
RPD	Resolution Pat Down
SEP	System Evaluation Plan
SER	System Evaluation Report
SME	Subject Matter Expert
SO	Screening Operator
SOP	Standard Operating Procedures
B3	[redacted]
T&E	Test and Evaluation

TEMP	Test and Evaluation Master Plan
TIR	Test Incident Report
TSA	Transportation Security Administration
TSE	Transportation Security Equipment
TSL	Transportation Security Laboratory
TSO	Transportation Security Officer
B3 49 U.S.C. § 114(r)	
USP	Unpredictable Screening Process
XML	Extensible Markup Language

Appendix A: Detailed System Descriptions

The following trademarked systems will be tested during this round of operational testing; additional information on system capabilities can be found on the vendor website, if desired:

L3 ProVision Millimeter Wave

The L3 ProVision quickly screens subjects using safe active millimeter wave (MMW) radio frequency technology to detect concealed objects [redacted] A quick scan provides checkpoint personnel with the data they need to confidently pass an individual through a checkpoint. ProVision quickly creates a 3-D black and white silhouette of the subject that reveals concealed objects. [redacted]

Figure A-1: L3 ProVision Millimeter Wave

Rapiscan Secure 1000 Single Pose

The Secure 1000 Single Pose uses backscatter technology as well as Rapiscan proprietary image processing software and an operator-friendly interface to rapidly and comprehensively screen passengers for a wide range of potential threats [redacted]

Figure A--2: Rapiscan Secure 1000 Single Pose AIT

Appendix B: Operational Test Data Collection Methodology

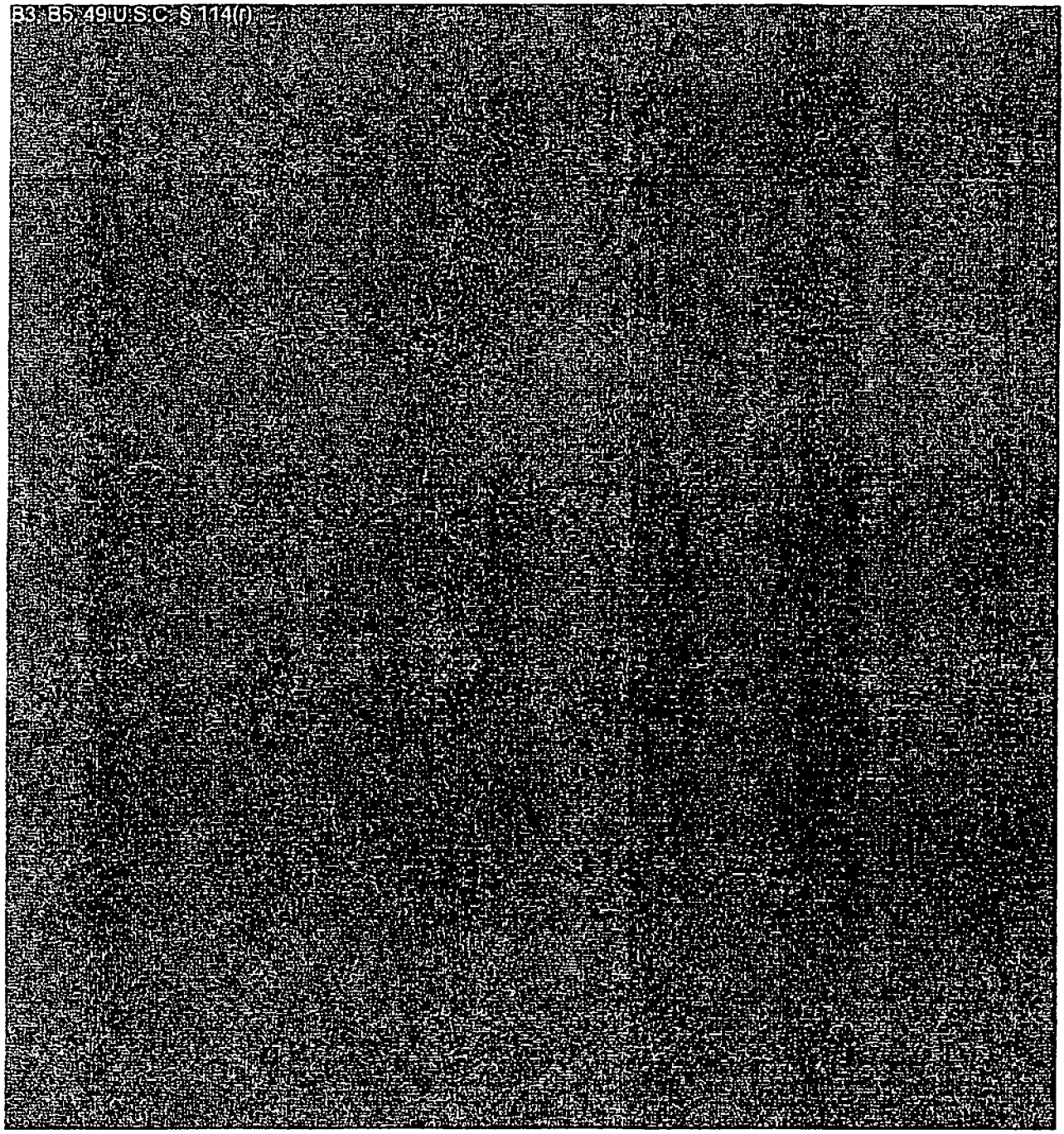
COI/AI #	COI	Criterion #	MOE/MOS	MOP #	MOP	Key Methodologies for MOP
(b) (5)					B3; B5; 49 U.S.C. § 114(r)	
					(b) (5)	
					B3; B5; 49 U.S.C. § 114(r)	
					(b) (5)	

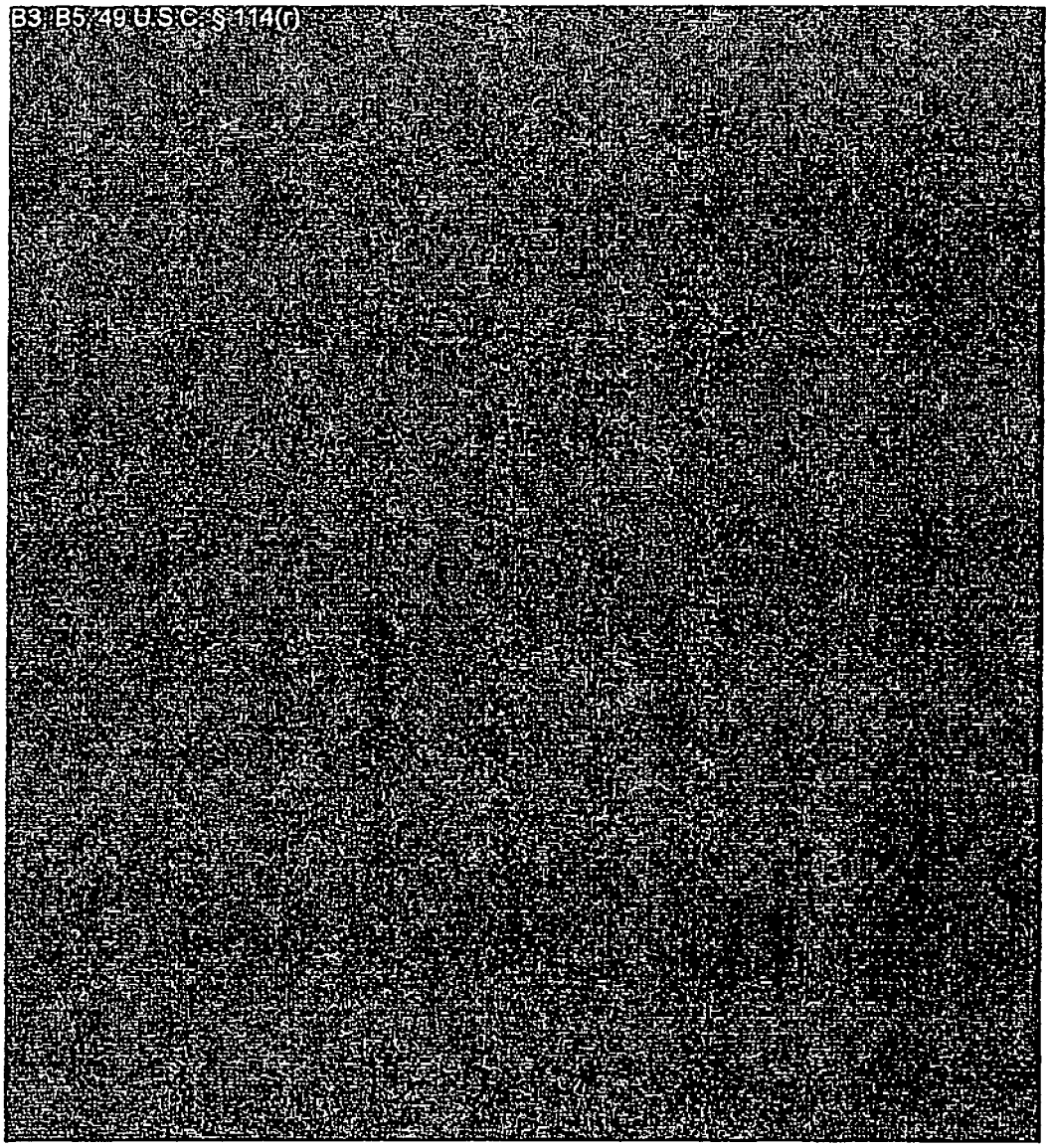
Operational Test Plan Advanced Imaging Technology System, ATR
B3; B5

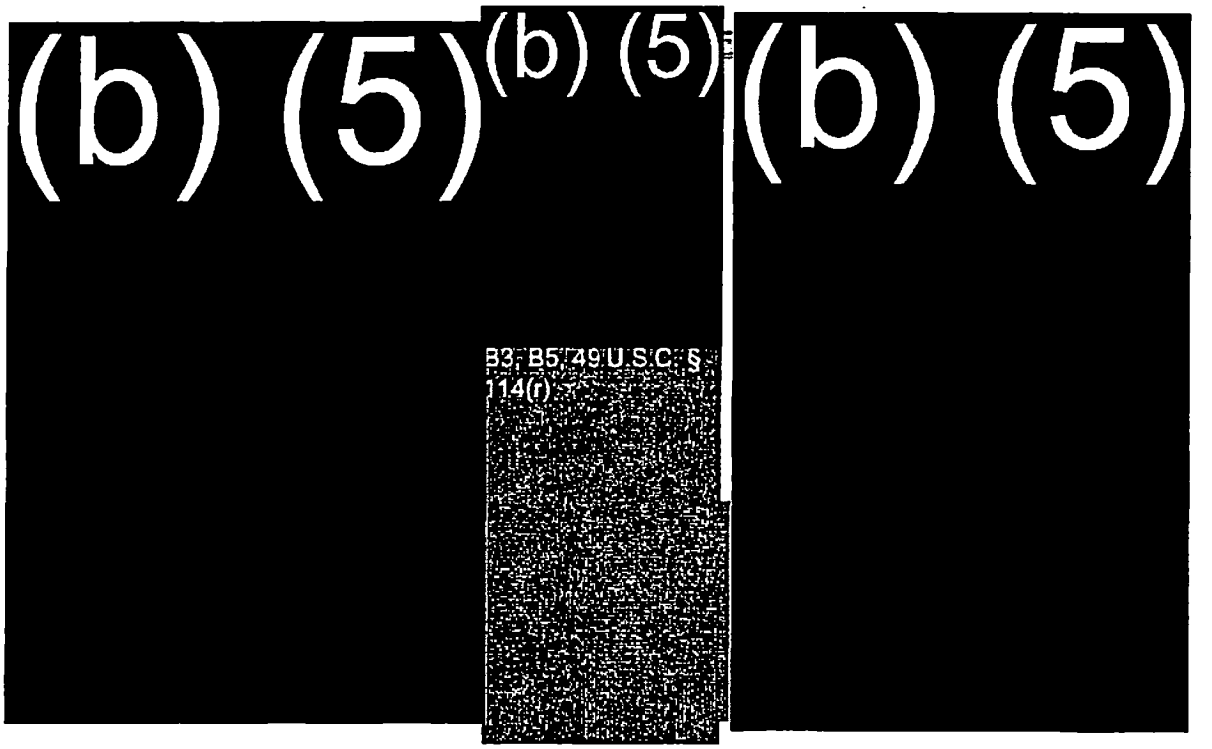
COI/AI #	COI	Criterion #	MOE/MOS	MOP #	MOP	Key Methodologies for MOP
(b) (5)						

COI/AI #	COI	Criterion #	MOE/MOS	MOP #	MOP	Key Methodologies for MOP
(b) (5)			(b) (5) B3, B5, 49 U.S.C. § 114(r)		B3, B5, 49 U.S.C. § 114(r)	
			(b) (5)			

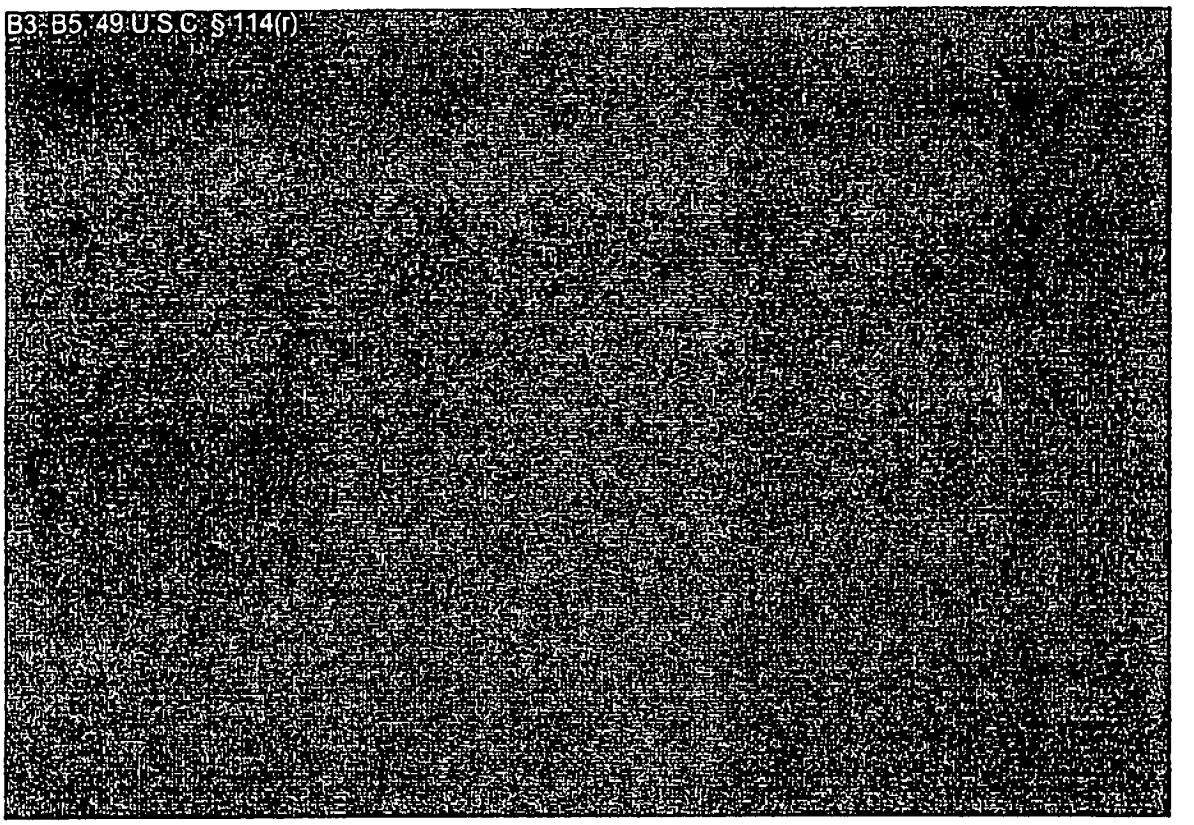
Appendix C: Data Collection Forms



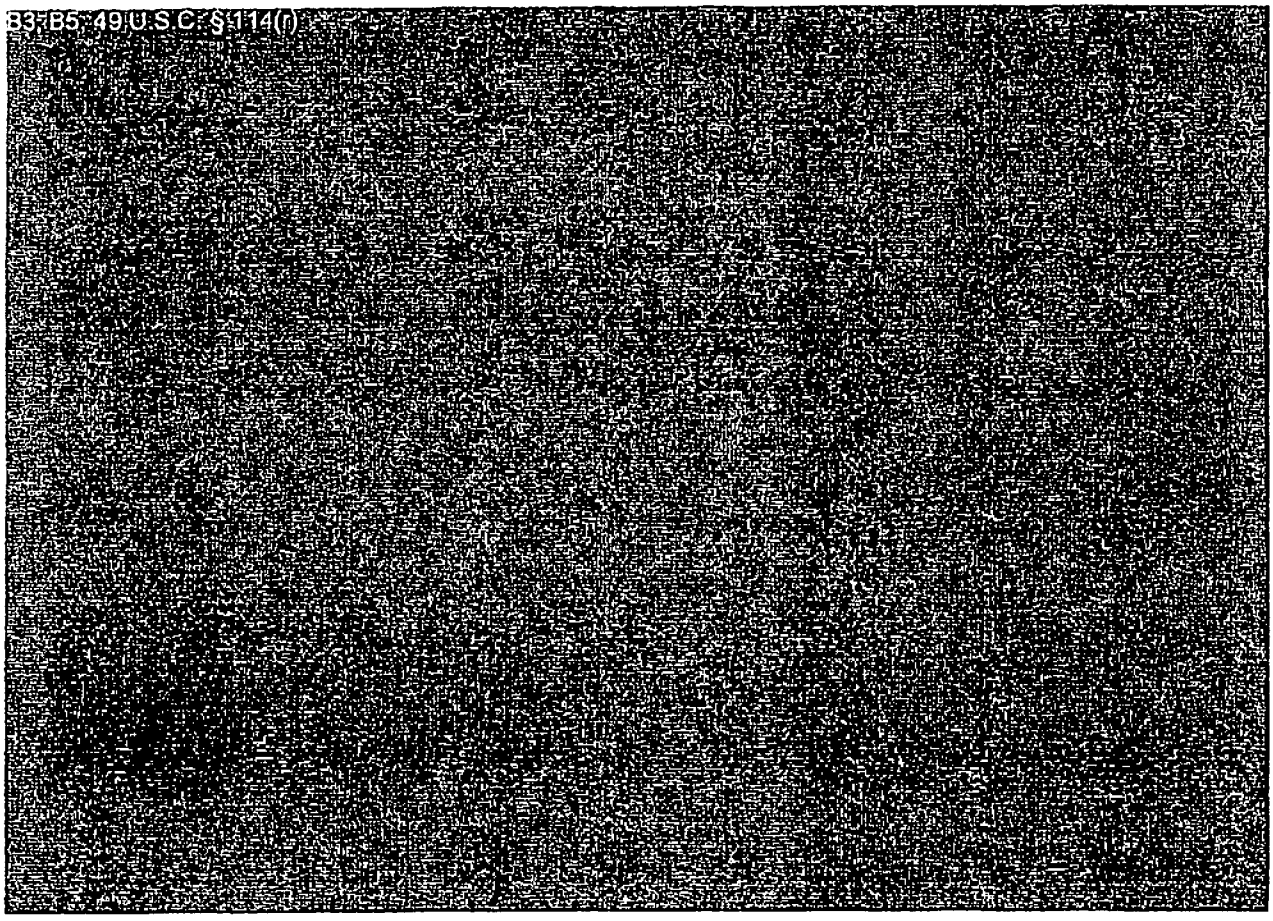


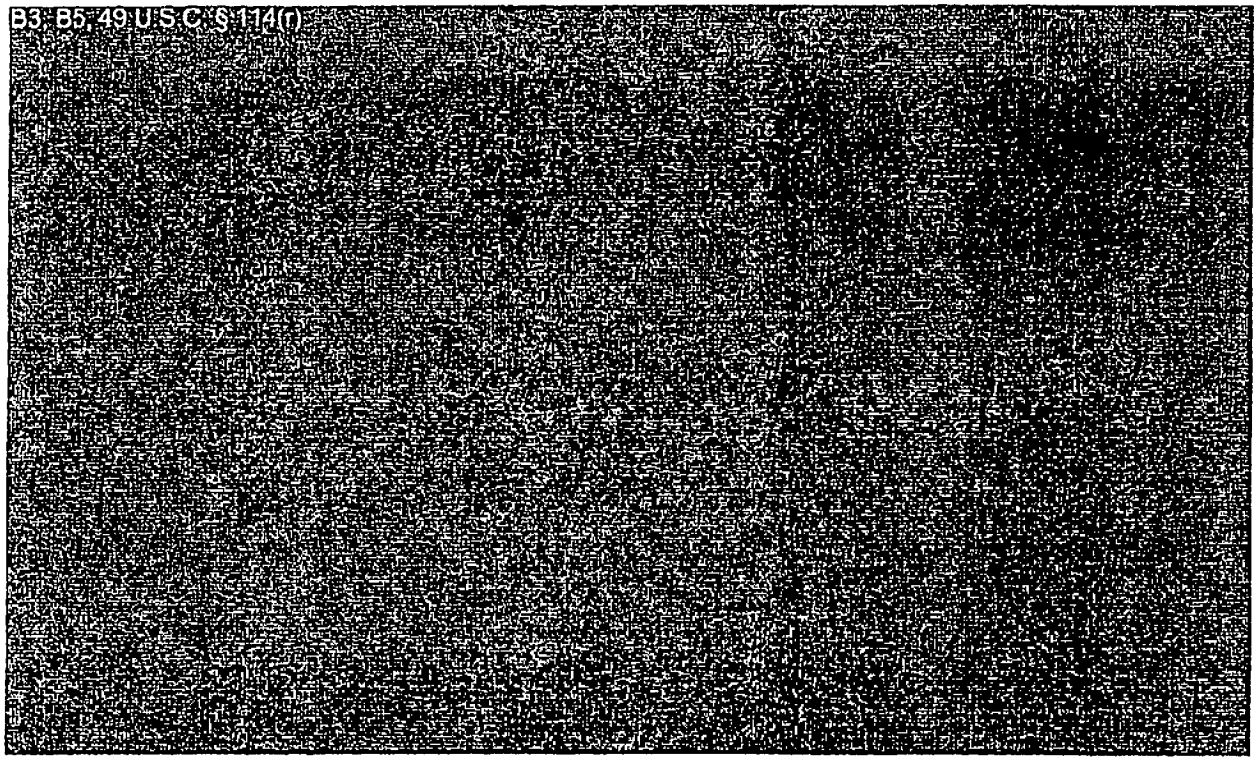


AIT ATR Maintenance Checklist

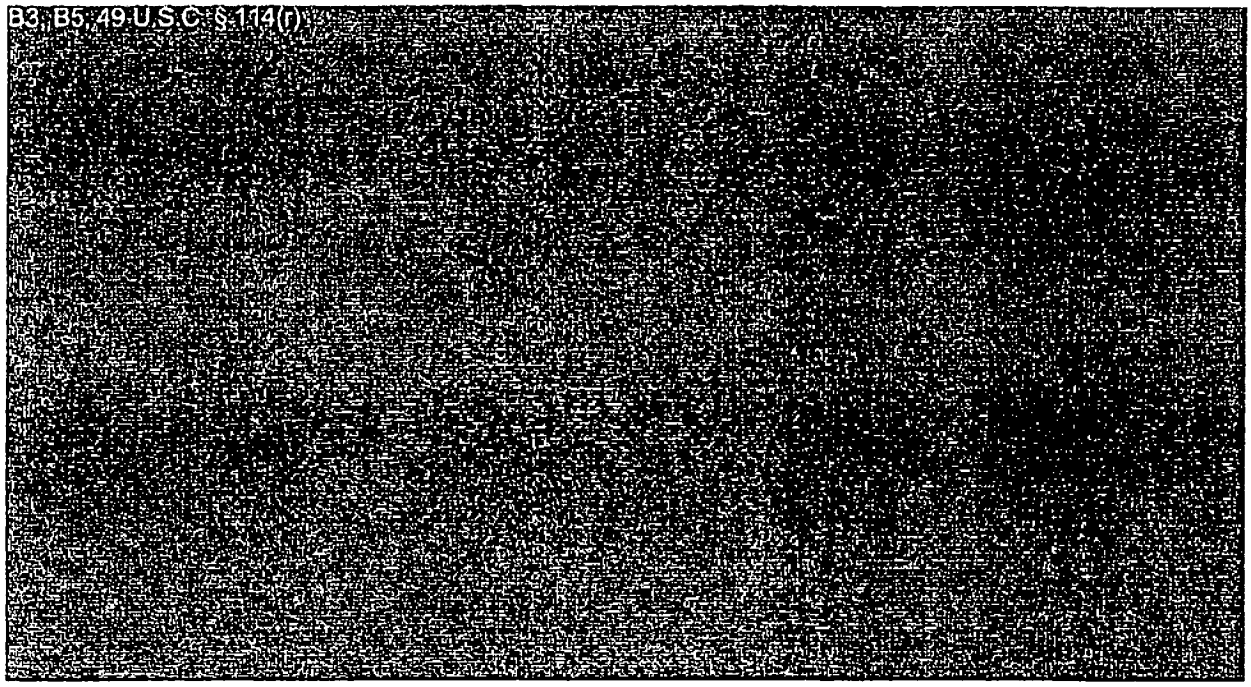


AIT ATR TSA Leader Interview

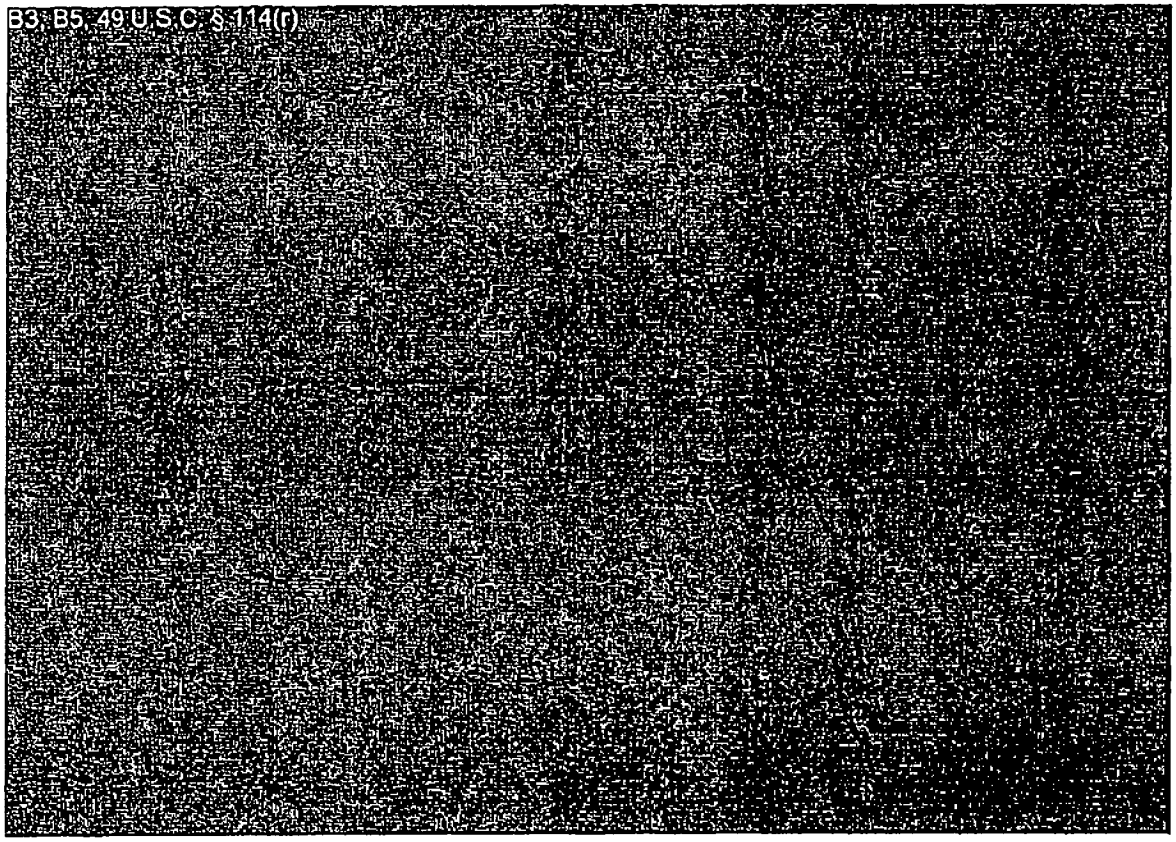




AIT ATR Information Assurance Excursion

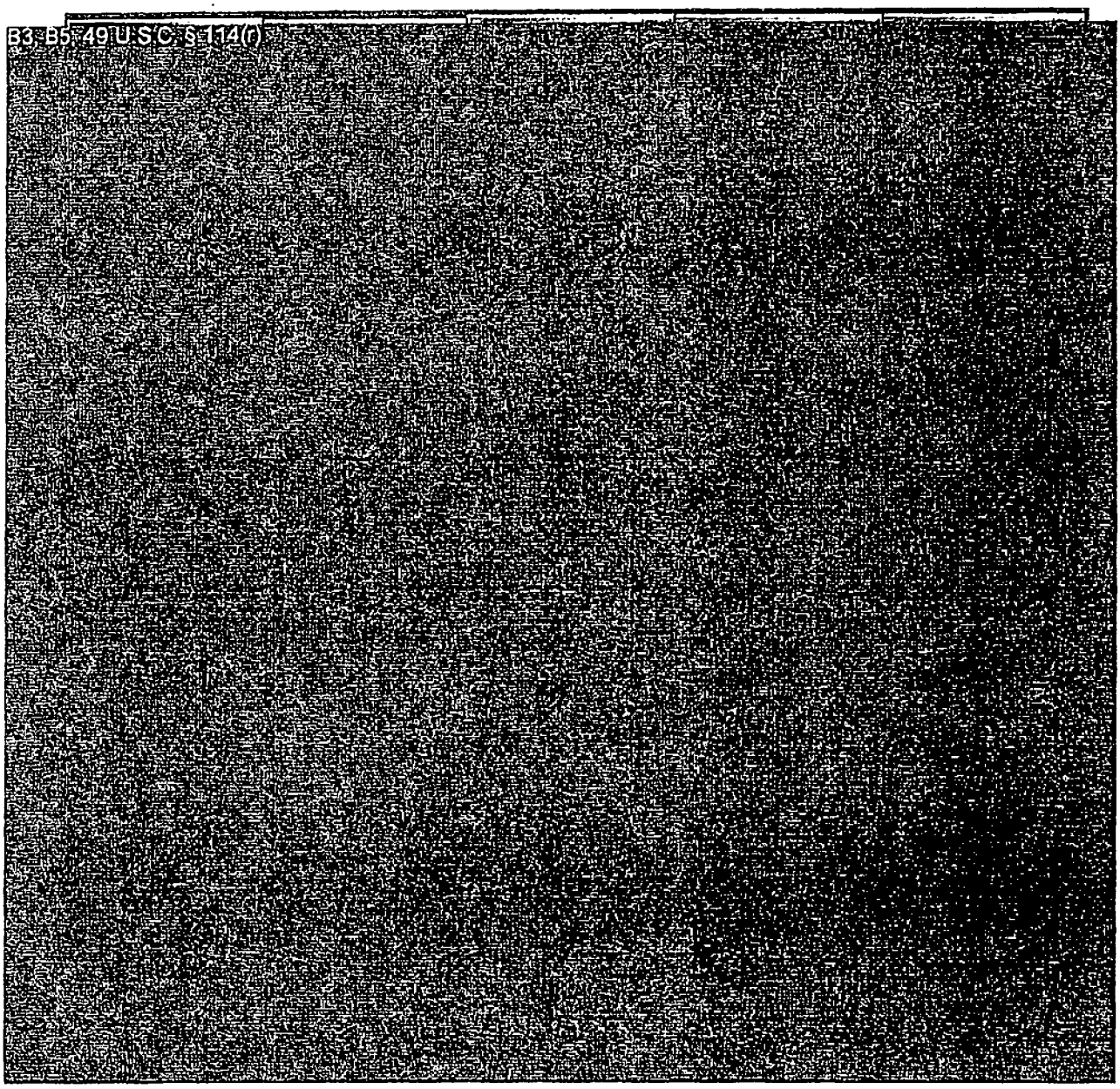


Operational Test Plan Advanced Imaging Technology System, ATR
B3



AIT ATR TSO Interview

B3 B5 49 U.S.C. § 114(r)



Appendix D: Data Authentication Group Charter and Standard Operating Procedures

1.0 PURPOSE

This charter and SOP provide guidance to DAG members and technical support staff. Guidance includes responsibilities, methodology, and procedures applicable to the authentication of event data collected during AIT ATR OT&E Efforts.

2.0 CHARTER

2.1 Mission

The mission of the DAG is to authenticate that the data being generated and collected during the AIT ATR OT&E is suitable for analysis to evaluate the AIT ATR and the data is complete, accurate, consistent, and representative of event activities. The DAG also supports anomaly research and quality control (QC) functions during the authentication process. The DAG does not perform analysis for evaluating the system under test.

The DAG is an independent body that is separate from the event execution and system assessment/evaluation functions. The DAG provides a forum in which agencies or stakeholders, as members of the DAG, may express and document opinions concerning event execution, data collection, data reduction, data authentication and their impact to the TSA system-level database.

2.2 Membership

The DAG is a multi-disciplined team composed of a DAG Chair appointed by TSA E&OI leadership and DAG voting members who are representatives from the test, acquisition, and user communities. Specifically, the following organizations are expected to provide representatives to support planned DAG activities: the user proponency, program management, and tester team. In addition, subject matter experts (SMEs) may be called upon as needed. Support contractors to DAG members may participate in the DAG if they have never had a contractual relationship to the system contractor on the system under test.

2.3 Responsibilities

2.3.1 Chair

Make final determination with respect to the suitability of event data for analysis.

Review existing system documentation and previous DAG documentation, products, and databases to ensure that the DAG Charter and DAG SOP conform to system standards, procedures, and definitions.

Support the DAG resourcing process by making recommendations to the system evaluation team regarding resources needed by the DAG.

Assemble DAG resources per the relevant resourcing documentation to include membership, training, support personnel, facilities, computing equipment, tools, and documents.

Ensure timely access to event data and data collection, reduction, and QC procedures.

Perform a formal end-to-end process confirmation of the event data collection, reduction, QC, and authentication processes using pilot data of each type from every type of data source.

B3, 49 U.S.C. § 114(r)

Provide guidance and assignments to DAG members.

Prepare official DAG minutes and report on DAG activities.

Submit a DAG Charter and DAG SOP for approval by the system evaluation team.

2.3.2 Members

Attend all DAG meetings.

Support all data authentication activities.

Participate in end-to-end process confirmation activities.

Participate in event data validation activities.

Participate in event data verification activities.

Monitor event conduct in areas of expertise.

Monitor data collection processes.

Monitor data reduction processes.

Support anomaly investigations as needed.

Make recommendations to the DAG Chair with respect to the suitability of event data for analysis. Ensure that dissenting opinions are documented in the official DAG minutes.

3.0 METHODOLOGY

Data authentication ensures that event data is verified as a complete, accurate, and consistent representation of the system's performance during the event and that the event activities were a reasonable portrayal of the system's performance within the constraints of event limitations. Data authentication is performed in three phases: end-to-end process confirmation, event data validation, and event data verification.

3.1 End-To-End Process Confirmation

The end-to-end process confirmation is a pre-event activity that will be completed prior to record trials. The end-to-end process confirmation ensures that the data collection, reduction, QC, and authentication processes will result in an event-level database suitable for evaluating the system. The planning and execution of the data collection, reduction, and QC processes are the responsibility of the event executor. The planning and execution of the authentication process is the responsibility of the DAG Chair.

3.2 Event Data Validation

Event data validation ensures that the event-level database provides a record of what actually occurred during the event. Event data validation is primarily a value judgment process that often requires the expertise of all DAG members.

3.3 Event Data Verification

Event data verification determines whether or not the event plan was executed as intended and whether or not the data in the event-level database is complete, accurate, and consistent. The event data verification process necessarily assumes that the planned execution will adequately generate the data needed for analysis purposes. Event data verification has three components: completeness, accuracy, and consistency.

3.3.1 Completeness

Completeness is a measure of how much of the required data is available for analysis. Completeness requirements are established for data elements, expressed as a percentage requirement for the proportion of the times that the data element must be present and verified as an acceptable value. Data will be presented to the DAG in the form of Quick Look Reports (QLR) presented at the data element level or aggregated as appropriate.

3.3.2 Accuracy

Accuracy is a measure of the correctness of individual data element values. An indicator of accuracy is a data element value that is within expected range. Out of range values are reviewed to determine whether they are accurate as a data outlier.

3.3.3 Consistency

Consistency is a measure of the acceptability of a data element's value when compared to the values of other data elements. Data consistency can be determined by applying software algorithms that incorporate relationship rules to check for data values that might be inconsistent with the values of other data elements.

3.4 Authentication Codes

Based upon the results of event data validation and verification, anomaly research, and/or the DAG's knowledge of the system, the DAG will assign authentication codes to the data in the event-level database to reflect the DAG's assessment of the data's suitability for analysis. (b) (5)

[redacted]

he DAG Chair is responsible for developing a systematic approach to using authentication codes.

4.0 PROCEDURE

The DAG product will be an authenticated event-level database. The goal is an event-level database with no unexplained anomalies that is suitable for evaluative analyses. DAG activities correspond to the three phases of authentication: end-to-end process confirmation, event data validation, and event data verification.

4.1 End-To-End Process Confirmation

End-to-end process confirmation ensures that the data collection, reduction, and Quality Control (QC) processes implemented by the event executor, and the authentication process implemented by the DAG are appropriate to address evaluation issues and measures. The DAG will also review how event activities are controlled to confirm that the collection mechanisms do not adversely affect the conduct of the operations. The DAG will also confirm that the proper operational conditions are incorporated in the event plan; the data collection, reduction, and QC plans incorporate procedures for the capture of complete, accurate and consistent data; the event

data resulting from subjective observations were the result of applying appropriate rules; and finally, that the data authentication process will yield an event-level database suitable for analysis. The end-to-end process confirmation provides the DAG with the necessary confidence that the data collection, reduction, and QC processes will support the data authentication process. The end-to-end process confirmation activities are performed prior to record trials and include:

Review event planning, event execution, and evaluation documents to ensure an understanding of issues, criteria, data collection (manual and automated), data reduction, and event conduct limitations.

Review data collection, reduction, and QC procedures to confirm correct generation of data elements.

Develop DAG-specific procedures to properly apply authentication codes to event data.

Develop DAG-specific software to QC and process event data in support of DAG activities.

Dry-run the data collection, reduction, QC and authentication processes. This offers the evaluation and event execution teams the opportunity to identify problems, clarify possible misunderstandings, and take necessary corrective actions. The results will be reported at the test/event readiness review before the start of record trials.

4.2 Event Data Validation

Event data validation is a determination as to whether or not the data provides a reasonable representation of what actually occurred during event activities.

4.3 Event Data Verification

Event data verification is a determination as to whether or not the event plan was executed as intended and whether or not the data in the event-level database are complete, accurate, and consistent.

4.3.1 Verification Levels

Verification is accomplished through manual and automated data checks. The focus is on determining the reasonableness of each data element by itself and in relation to logically linked data elements. The AIT ATR Evaluator conducts level one and two verification checks and the DAG conducts level three and four checks. The four verification levels are:

Level one checks are single data element reviews within a record to ensure that individual data element values are within acceptable value ranges.

Level two checks are across data element reviews within a record to ensure that logically related data elements within the data record do not conflict.

Level three checks are across record reviews within the same data file to ensure that logically related data elements in the same file do not conflict.

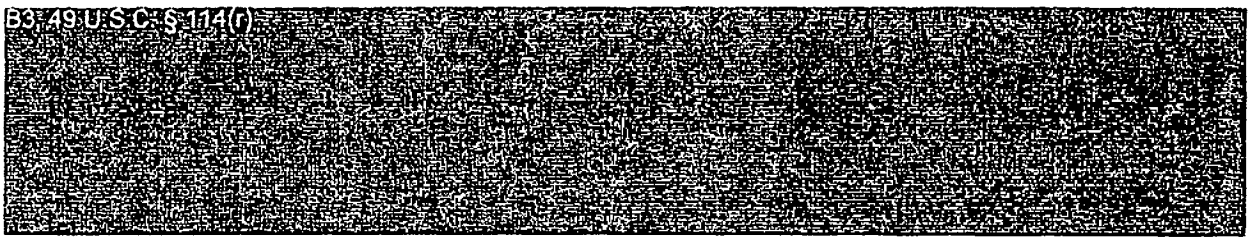
Level four checks are across file reviews to ensure that logically related data elements in different data fields and records do not conflict.

4.3.2 Quick Look

The DAG will perform DAG-specific quick-look verifications of event data. The DAG technical support staff will provide the DAG with reports indicating the completeness, accuracy, and consistency of event data.

4.3.3 Crosswalk

The DAG will crosswalk and review linkage of the event's RMA TIRs and identify and investigate event conduct and data anomalies.



4.4 Meetings

The DAG members will review appropriate documentation to become familiar with DAG responsibilities and processes prior to the start of operational test. The DAG will meet twice a week during conduct of the OT&E to review testing data.

4.5 Use of Event Data

The system evaluation team determines the use of event data for analysis and inclusion in the system-level database. The DAG Chair will make recommendations to the system evaluation team with respect to the suitability of the event data for analysis. DAG members will make recommendations to the DAG Chair. Dissenting opinions will be documented in the official DAG minutes.

DAG members may not copy or remove data from the DAG site without written permission from the DAG Chair. Furthermore, DAG members should not release performance or other data to any organizations outside of the DAG unless required to support anomaly research as directed by the DAG Chair.

5.0 TRAINING

5.1 DAG Training

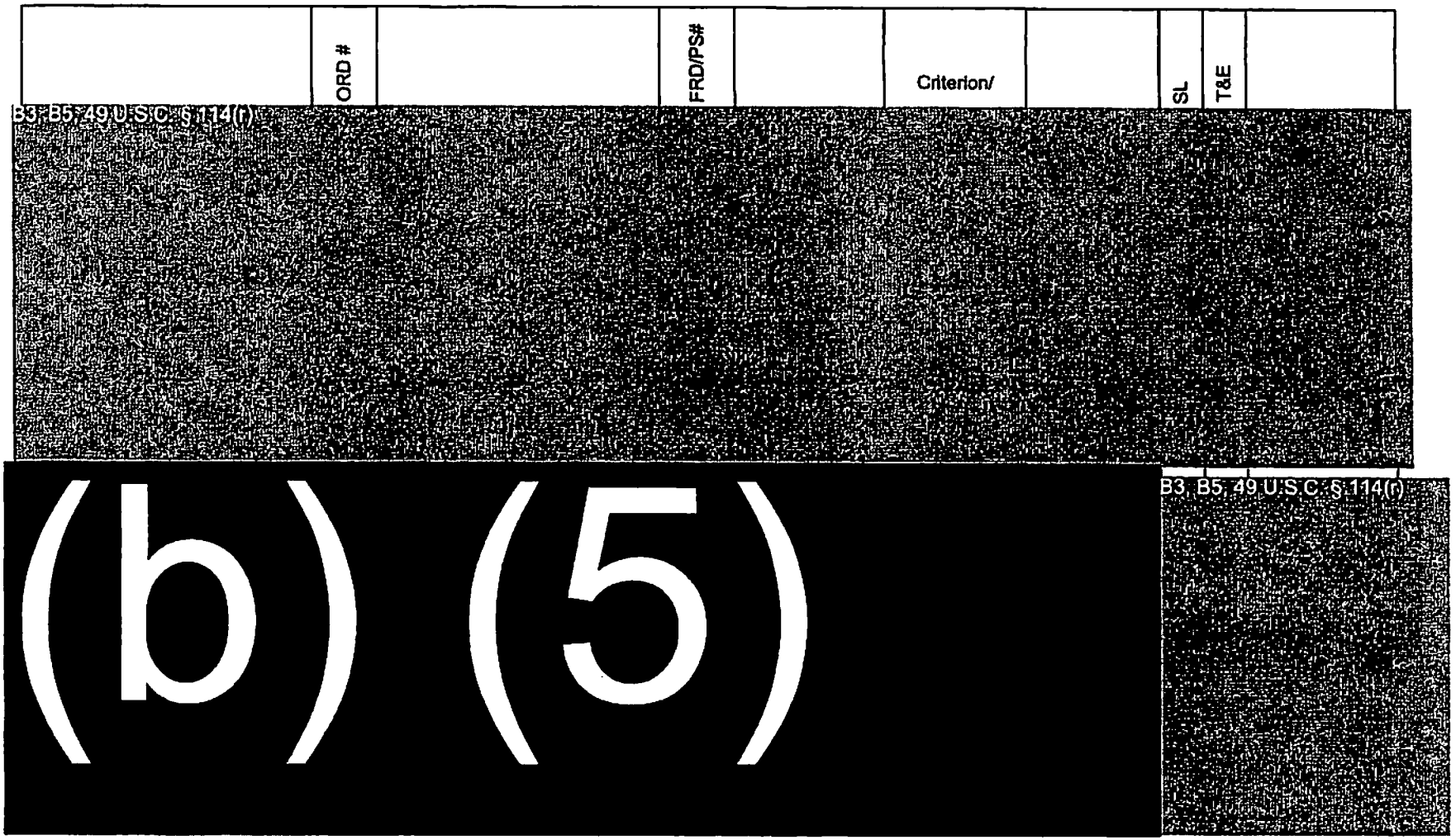
Members will be trained to include operations and capabilities of the system under test, familiarization with test purpose and concept as documented in the System Evaluation Plan (SEP) and OTP, data reduction plan and instrumentation for the test. All members will be familiar with the DAG SOP, test organization, and key personnel.

Emphasis is placed to ensure that DAG members have access to sufficient system specific training prior to the initial DAG meeting so that they can contribute in a meaningful manner at the start of the test.

Appendix E: Baseline Correlation Matrix (BCM) / Requirements Crosswalk Matrix (RCM)

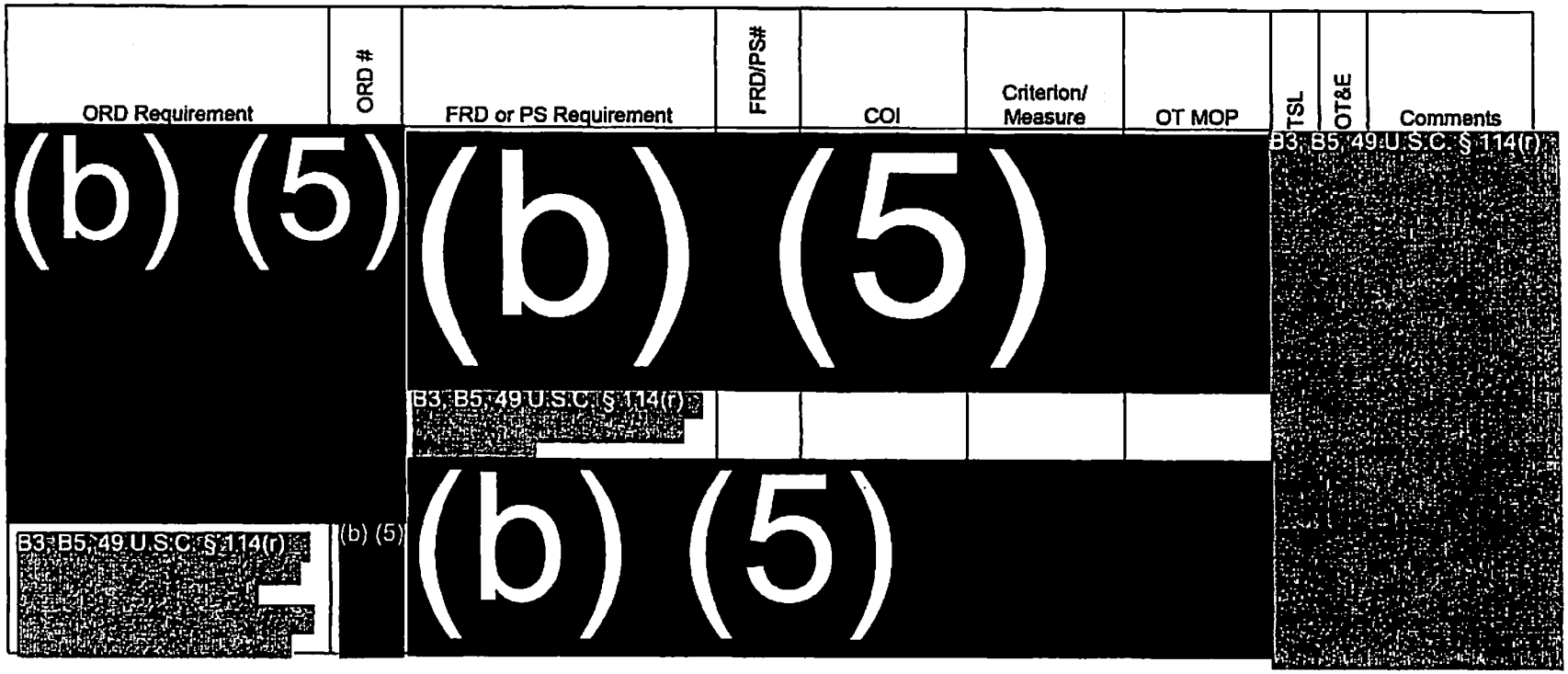
ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	SL	T&E	Comments
(b)(3):49 U.S.C. § 114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3 B5 49 U.S.C. § 114 (r)									



ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	SL	OT&E	Comments
B3, B5, 49 U.S.C. § 114(r)									
(b) (5)									B3, B5, 49 U.S.C. § 114(r)

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	SL	T&E	Comments
(b) (5)							B3, B5; 49 U.S.C. § 114(r)		



ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
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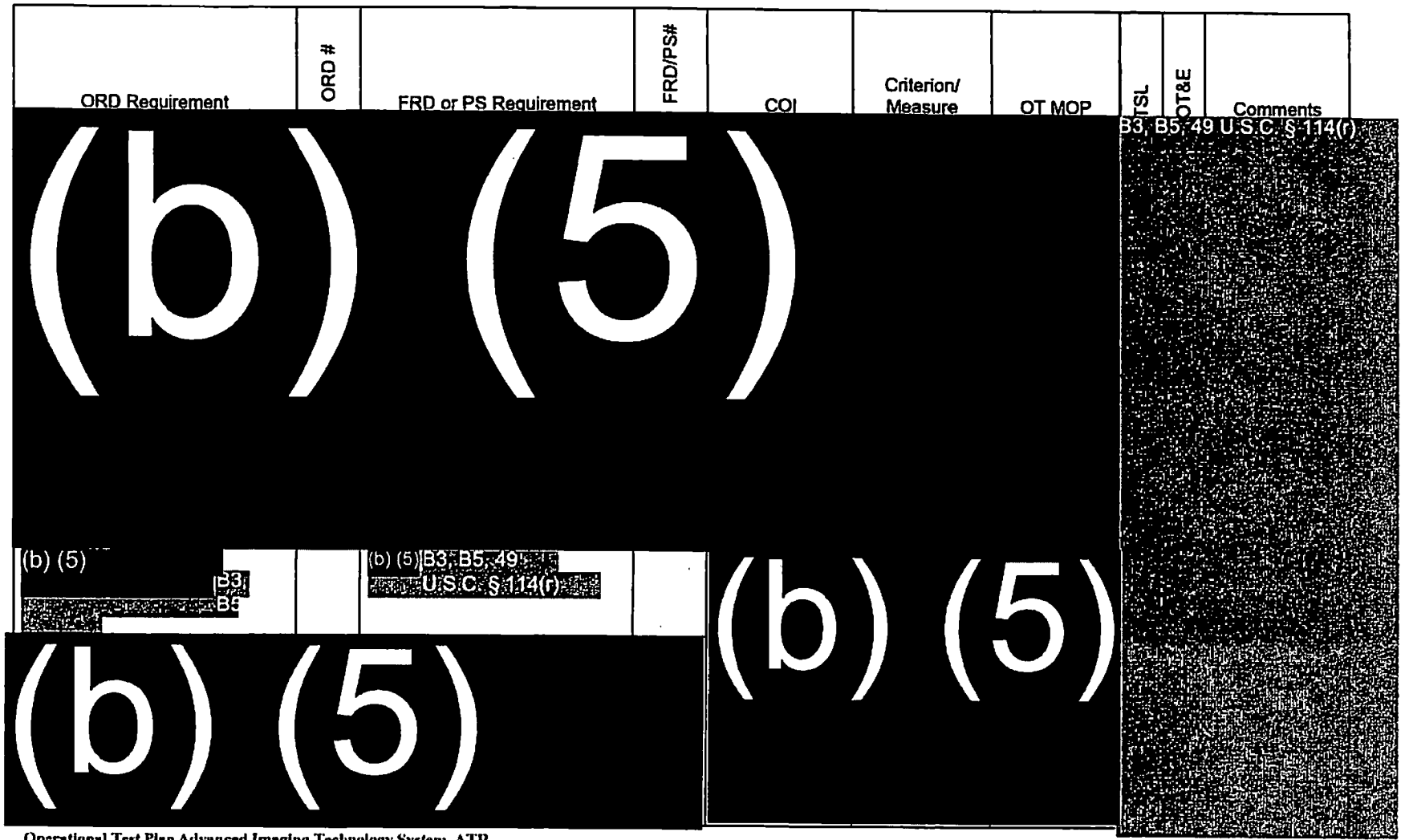
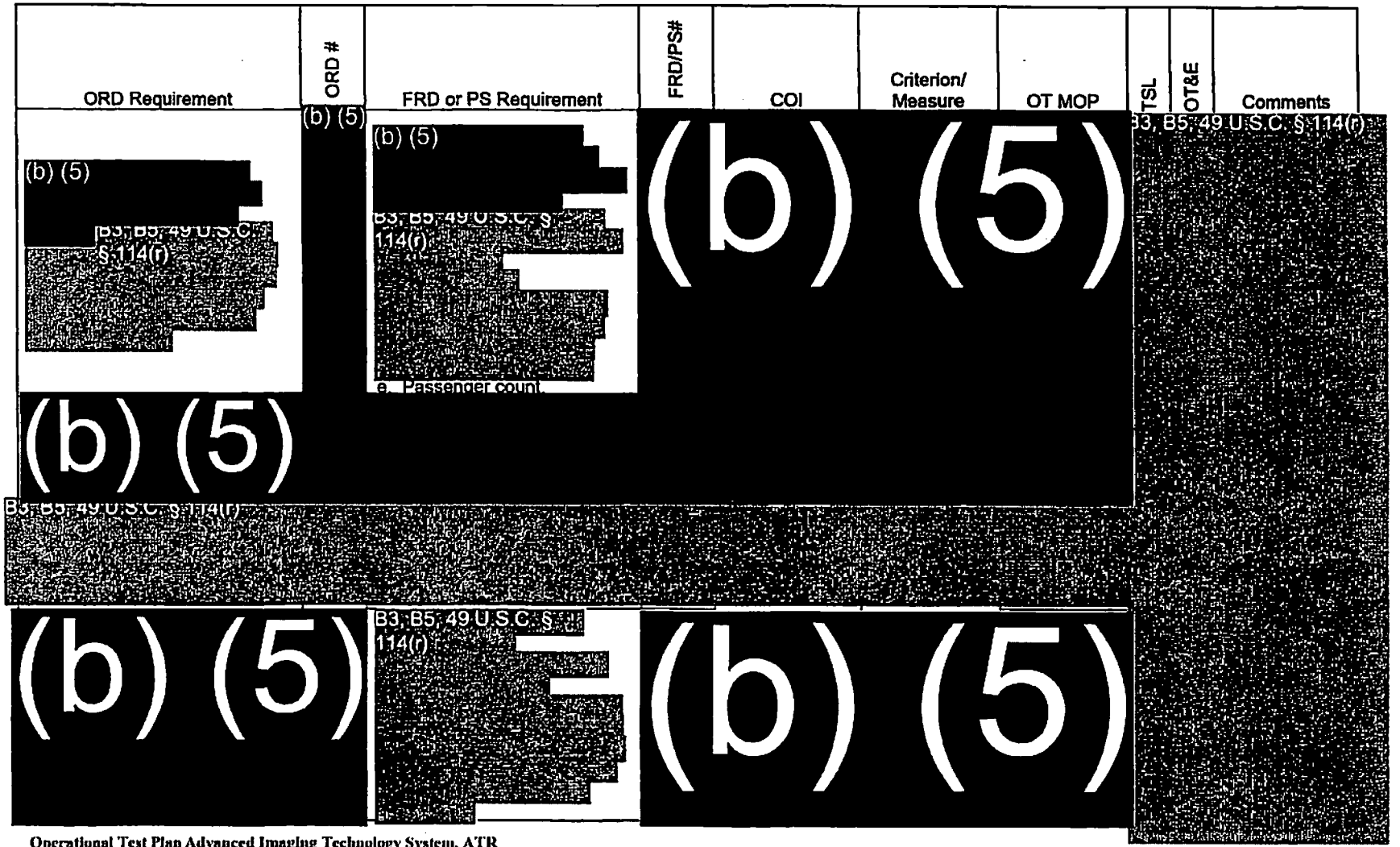


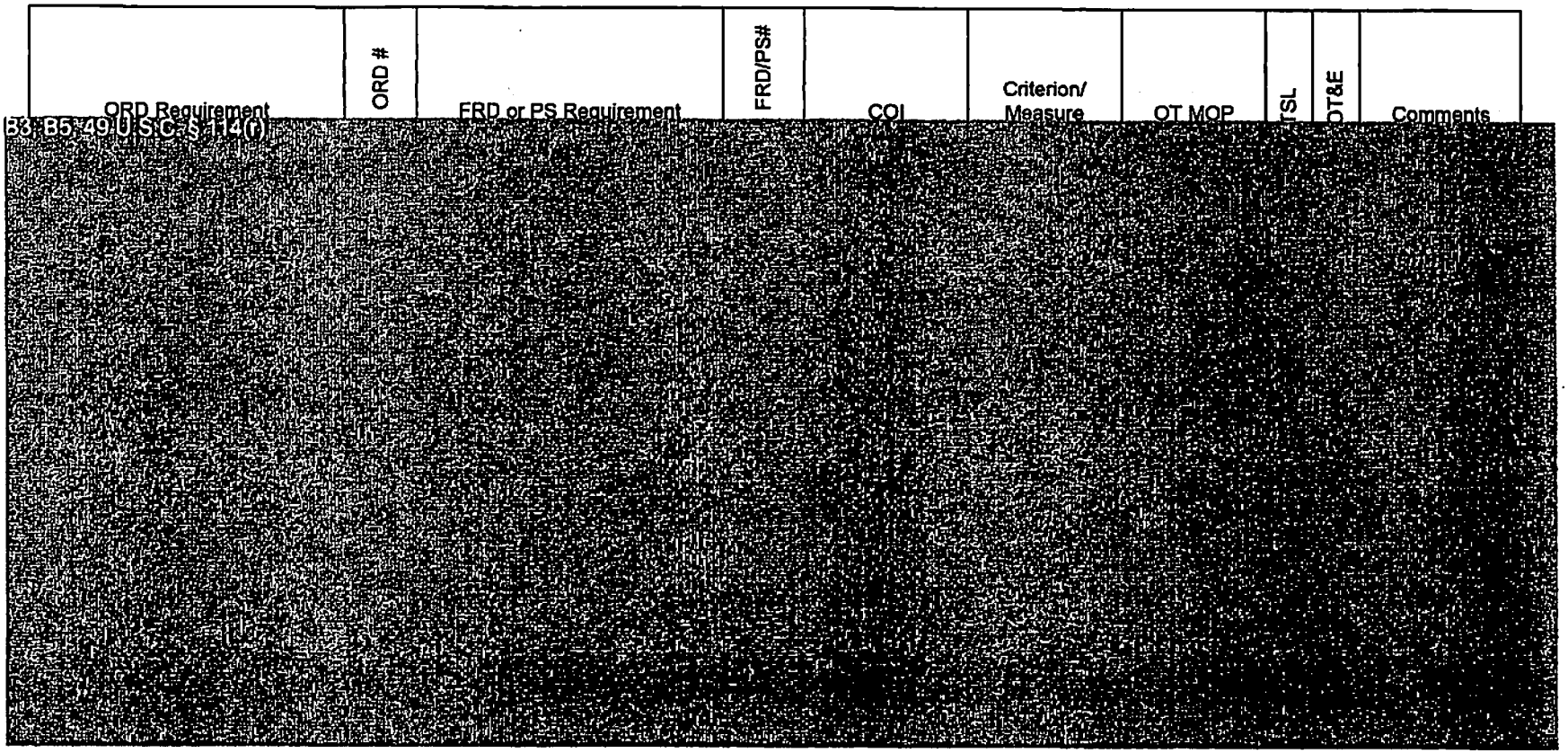


ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	SL	T&E	
(b) (5)							B3, B5, 49 U.S.C. § 114(r)		

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
(b) (5)									B3, B5, 49 U.S.C. § 114(r)

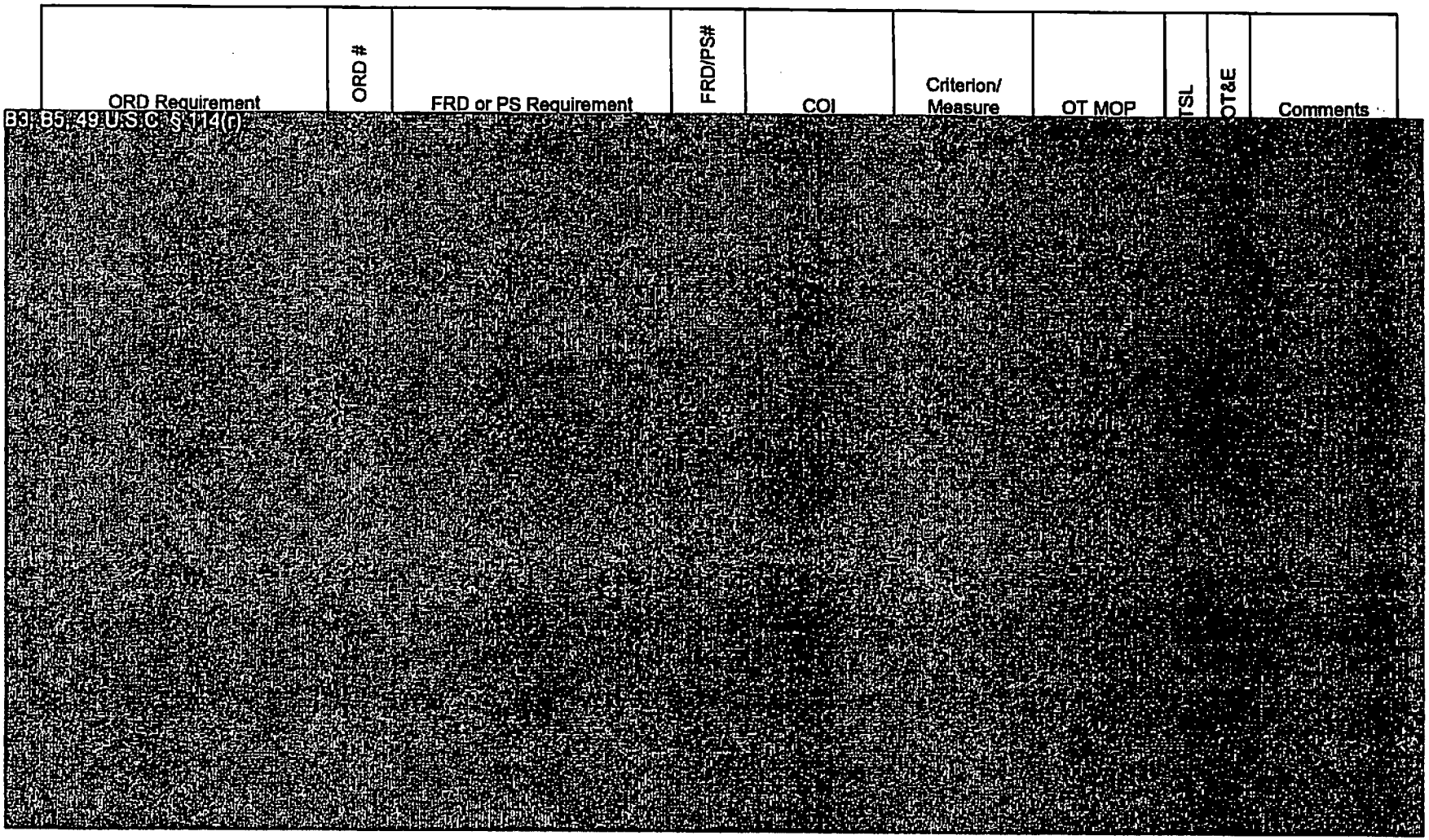
B3, B5, 49 U.S.C. § 114(r)

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3 B5 49 U.S.C. § 114(r)									



ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	SL	T&E	Comments
B3, B5, 49 U.S.C. §114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5, 49 U.S.C. § 114(r)									



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ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5, 49 U.S.C. § 114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5, 49 U.S.C. § 114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
(b) (5)							33, B5, 49 U.S.C. § 114(r)		

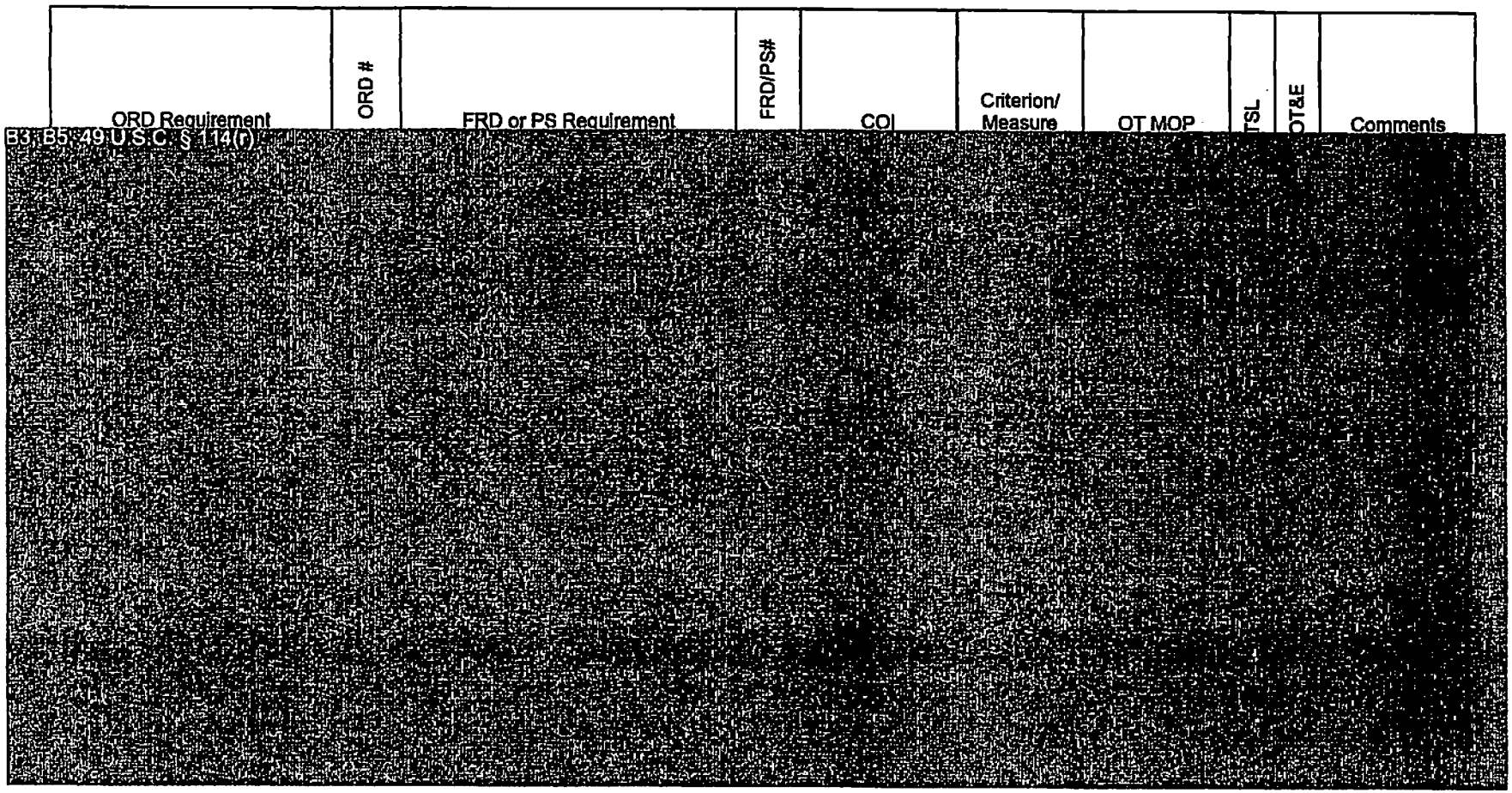
ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
(b) (5)									B3, B5, 49 U.S.C. § 114(r)

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
(b)(3), (b)(5), 49 U.S.C. § 114(r)									

Appendix F: Crosswalk of Operational Requirements

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5, 49 U.S.C. § 114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	SL	OT&E	Comments
(b) (5) B3; B5; 49 U.S.C. § 114(r)									B3; B5; 49 U.S.C. § 114(r)



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B3, B5, 49 U.S.C. § 114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5, 49 U.S.C. § 114(r)							B3, B5, 49 U.S.C. § 114(r)		
(b) (5)									

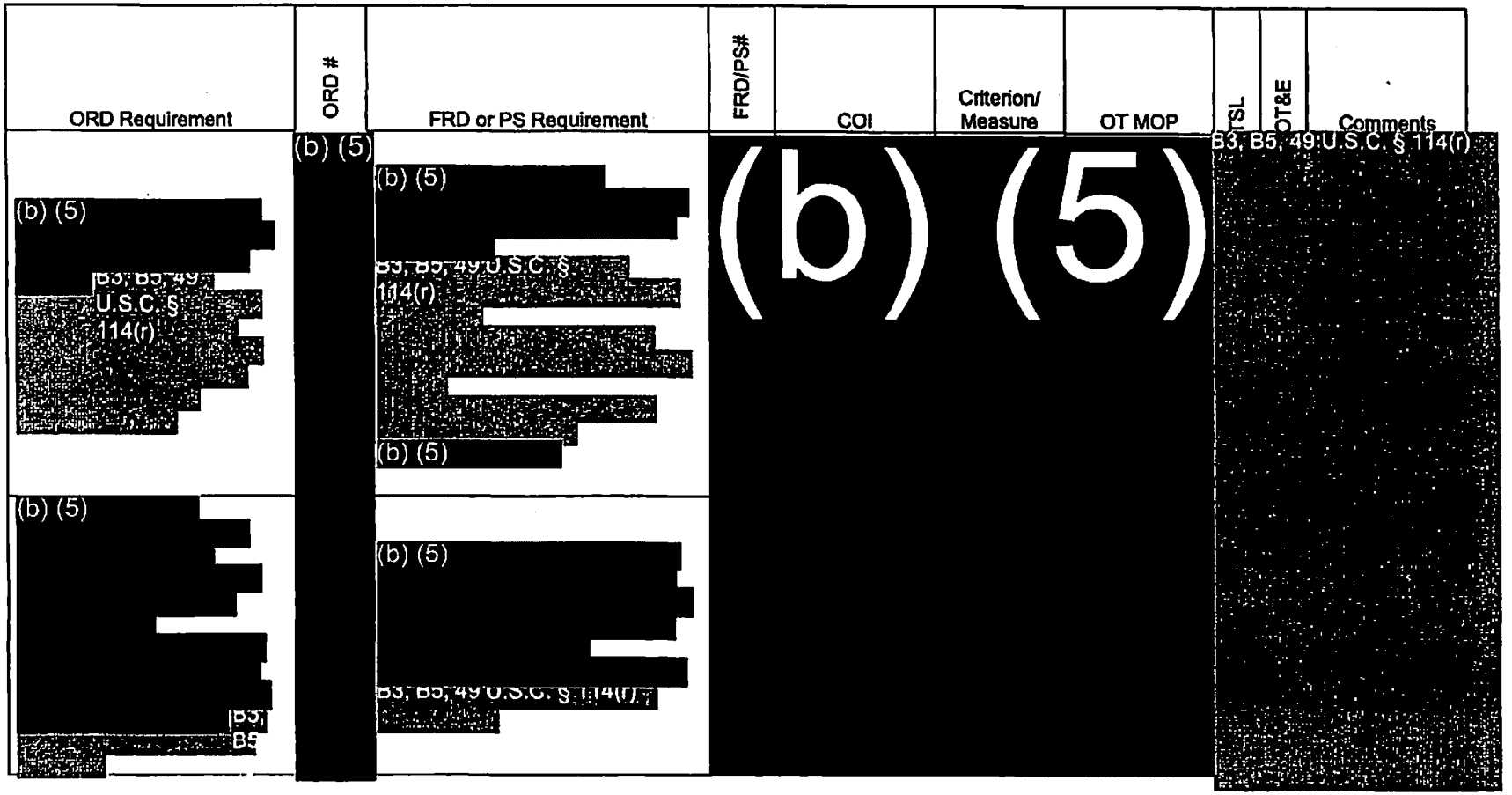
ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
(b) (5)							B3, B5; 49 U.S.C. § 114(r)		

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
(b) (5)									B3, B5, 49 U.S.C. § 114(r)

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
(b) (5)		(b) (5) B3, B5, 49 U.S.C. § 114(r) B3, B5, 49 U.S.C. § 114(r)	(b) (5)				B3, B5, 49 U.S.C. § 114(r)		

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3; B5; 49 U.S.C. § 114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5, 49 U.S.C. § 114(r)									
(b) (5)		(b) (5)							B3, B5, 49 U.S.C. § 114(r)



ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5, 49 U.S.C. § 114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	SL	T&E	
(b) (5)							B3; B5; 49 U.S.C. § 114(r)		

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
(b) (5)							B3, B5, 49 U.S.C. § 114(r)		
(b) (5) B3, B5, 49 U.S.C. § 114(r)		(b) (5)							

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	SL	DT&E	Comments
(b) (5)									B3; B5; 49 U.S.C. § 114(r)

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
(b) (5)									B3, B5, 49 U.S.C. § 114(r)

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5, 49 U.S.C. § 114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5, 49 U.S.C. § 114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
(b) (5)									B3, B5, 49 U.S.C. § 114(r)
B3, B5, 49 U.S.C. § 114(r)									

B3

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5, 49 U.S.C. § 114(r)									
(b) (5) B3, B5, 49 U.S.C. § 114(r)									B3, B5, 49 U.S.C. § 114(r)

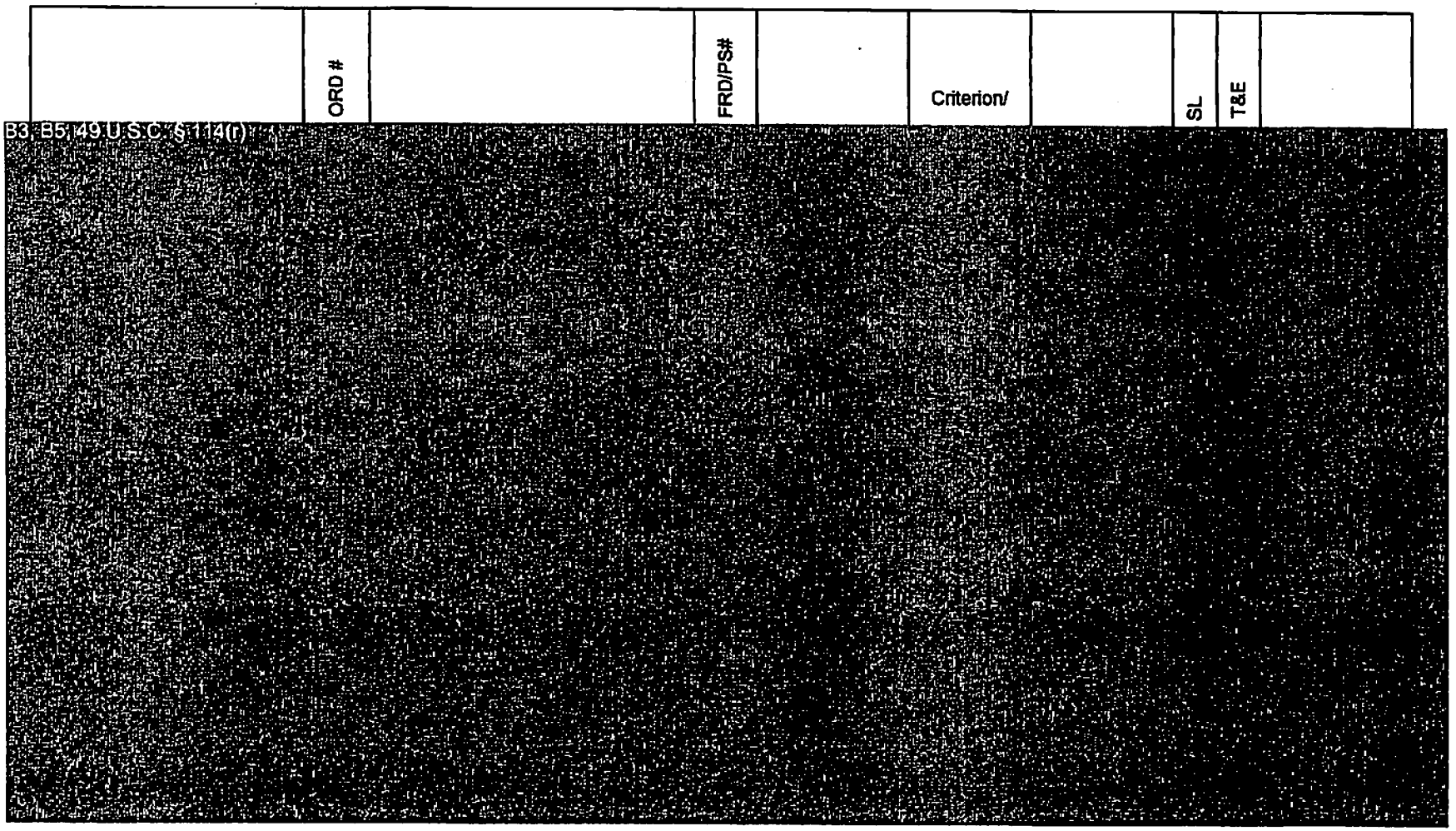
ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
(b)(3):49 U.S.C. § 114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5- 49 U.S.C. § 114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5, 49 U.S.C. § 114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
(b)(3) (B5) 49 U.S.C. § 114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5, 49 U.S.C. § 114(r)									



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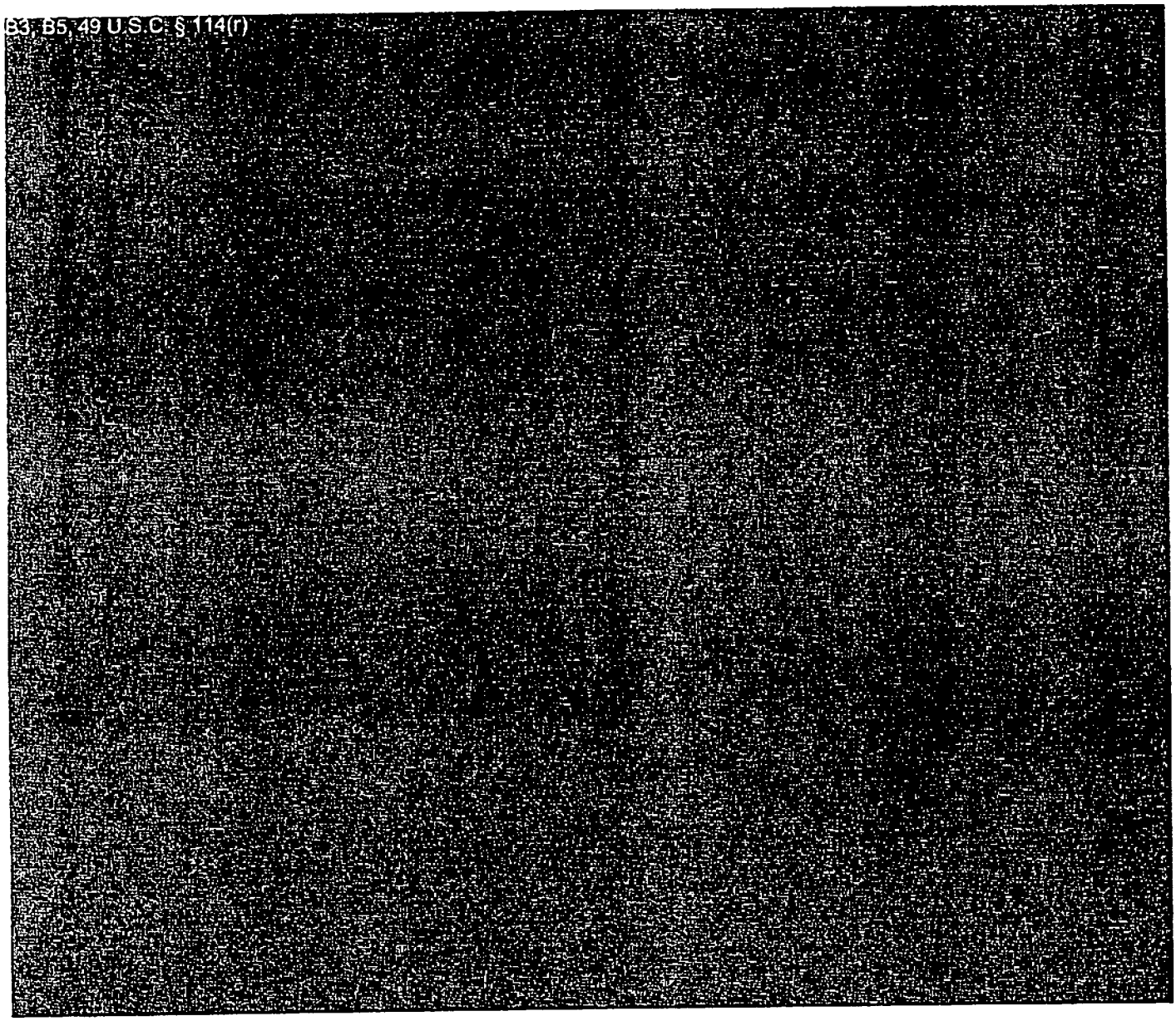
B3, B5, 49 U.S.C. § 114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5, 49 U.S.C. §114(r)									

ORD Requirement	ORD #	FRD or PS Requirement	FRD/PS#	COI	Criterion/ Measure	OT MOP	TSL	OT&E	Comments
B3, B5, 49 U.S.C. §114(r)									



DHS/ST/TSL-11/59

Final Report, Lab Qualification Test, L-3 ProVision 100 [redacted]

Advanced Imaging Technology with Automatic Target Recognition (AIT-ATR)

[redacted]

William Petracci, Test Director,
Independent Test and Evaluation

U.S. Department of Homeland Security
Science and Technology Directorate
William J. Hughes Technical Center
Atlantic City International Airport, NJ 08405

[redacted]

U.S. Department of Homeland Security
Science and Technology Directorate

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Technical Report Documentation Page

1. Report No. DHS/ST/TSL-11/59	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle Final Report, Lab Qualification Test, L-3 ProVision 100 [redacted] Advanced Imaging Technology with Automatic Target Recognition (AIT-ATR) [redacted]		5. Report Date [redacted] 6. Performing Organization Code
7. Author(s) William Petracci, Test Director, Independent Test and Evaluation		8. Performing Organization Report No. DHS/ST/TSL-11/59
9. Performing Organization Name and Address U.S. Department of Homeland Security Science and Technology Directorate Transportation Security Laboratory, TSL-1 William J. Hughes Technical Center Atlantic City International Airport, NJ 08405		10. Work Unit No. (TRAIS) 11. Contract or Grant No.
12. Sponsoring Agency Name and Address U.S. Department of Homeland Security Science and Technology Directorate Transportation Security Laboratory, TSL-1 William J. Hughes Technical Center Atlantic City International Airport, NJ 08405		13. Type of Report and Period Covered Final Test Report [redacted] 14. Sponsoring Agency Code ST
15. Supplementary Notes		

16. Abstract

This report provides an index of test activities and summarizes findings of the laboratory qualification test of the L3 Communications ProVision 100 AIT-ATR [redacted] This effort is part of a larger compliance test program directed by the Transportation Security Administration.

17. Key Words	18. Distribution Statement
Advanced Imaging Technology or AIT Automatic Target Recognition or ATR Checkpoint Passenger Inspection System Millimeter Wave Target Detection Explosives Detection	WARNING: THIS RECORD CONTAINS SENSITIVE SECURITY INFORMATION THAT IS CONTROLLED UNDER 49 CFR PARTS 15 AND 1520. NO PART OF THIS RECORD MAY BE DISCLOSED TO PERSONS WITHOUT A "NEED TO KNOW," AS DEFINED IN 49 CFR PARTS 15 AND 1520, EXCEPT WITH THE WRITTEN PERMISSION OF THE ADMINISTRATOR OF THE TRANSPORTATION SECURITY ADMINISTRATION OR THE SECRETARY OF TRANSPORTATION. UNAUTHORIZED RELEASE MAY RESULT IN CIVIL PENALTY OR OTHER ACTION. FOR U.S. GOVERNMENT AGENCIES, PUBLIC DISCLOSURE IS GOVERNED BY 5 U.S.C. 552 AND 49 CFR PARTS 15 AND 1520.

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Unclassified	Unclassified	32	

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TABLE OF CONTENTS

LIST OF TABLES

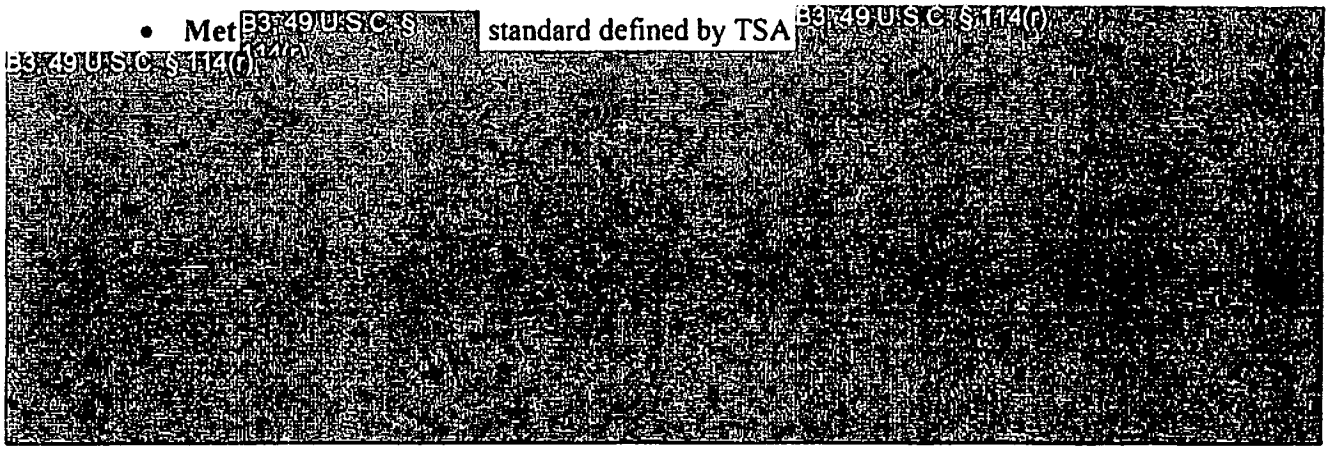
LIST OF FIGURES

EXECUTIVE SUMMARY

This report summarizes findings and provides a catalog and index of activities of the laboratory qualification test program of the L3 Communications ProVision 100 AIT-ATR [redacted] This effort is part of a larger compliance test program directed by the Transportation Security Administration.

The Transportation Security Laboratory's Independent Test & Evaluation Group found that the L3 ProVision 100 AIT-ATR [redacted]

- Met [redacted] standard defined by TSA [redacted]



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1. INTRODUCTION

The Transportation Security Laboratory's Independent Test & Evaluation (IT&E) Group conducted multiple test activities evaluating 55 requirements [redacted] at the request of the Transportation Security Administration. This request was in support of its acquisition of an Advanced Imaging Technology – Automatic Target Recognition (AIT-ATR) system referred to as the ProVision 100 AIT-ATR [redacted] manufactured by L3 Communications, Woburn, MA.

This report also identifies 2 additional, PMO-directed test activities one associated with Personal Medical Electronic Devices [AIT Procurement Specification Para 3.1.6.1 (# 135)] [redacted]

1.1 PURPOSE

This report:

- Outlines the test program providing a catalog of activities and reports,
- [redacted]
- Provides a cross-index of these 55 qualification tests by requirement and test procedure/record.

1.2 REQUIREMENTS

IT&E conducted tests based on the following TSA requirements:

- "Functional Requirements Document (FRD) for an Advanced Imaging Technology System with Automatic Target Recognition for Checkpoint Operations", [redacted] dated [redacted] (SSI)

- "Procurement Specification (PS) for Advanced Imaging Technology (AIT) for Checkpoint Operations", Version [redacted] (SSI)

[redacted]

- "AIT with ATR Requirements Correlation Matrix (RCM) – Baseline Correlation Matrix (BCM) V2.5" in MS Excel dated [redacted]

2. TEST & EVALUATION STRUCTURE

2.1 SCOPE

Test resources were applied on this program verifying attributes critical to TSA. Also, since the primary mission of the AIT-ATR is target detection on passengers, the test program was divided into two separate programs: *detection* and *non-detection* testing with detection receiving the majority of resources. The detection test activities evaluated 9 shall statements from the ATR FRD [redacted] The non-detection test activities evaluated 46 shall statements 17 from the ATR FRD and 29 from the AIT Procurement Specification.

2.2 CATALOG of RECORDS

The complete set of activities of this program is reported in 9 major document sets as shown in Table 1. IT&E generated 7 packages, the Food & Drug Administration (FDA) created 1 set and L3 Communications created the other in their Qualification Data Package (QDP) (Table 1, Record #14) that they provided as evidence of compliance. For this laboratory, *type-test* program, there are 2 plans, 2 procedures, 2 test records, 1 audit report, 1 FDA safety report – mentioned above [redacted]

2.3 DETECTION TEST OUTLINE

The program started with the receipt of TSA's ATR Functional Requirements Document at which time the TSL published & distributed a Qualification Management Plan (Table 1, Record #2) defining key test program tasks, processes and relationships to the participating OEMs.

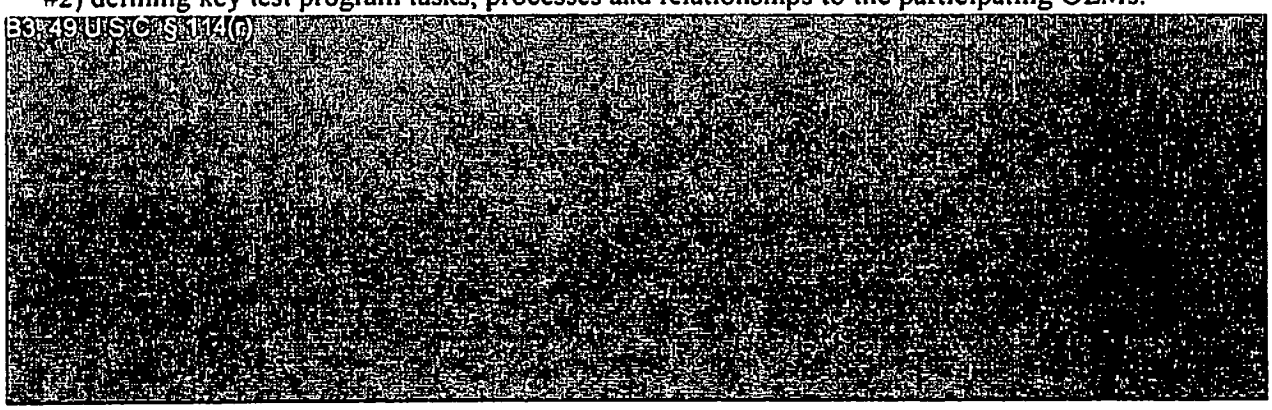


Table 1. Catalog of Qualification Test Records

#	CATALOG of QUALIFICATION TEST REPORTS	CONTROL NUMBER DHS/ST/TSL	CONTROL NUMBER TSL-ICC
1	Final Report, Lab Qualification Test – L3 Provision 100 [redacted]	11/59	
2	Management Plan for the QT&E of AIT with ATR (AIT-ATR QMP)	10/88	
3	Test Plan, AIT-ATR Lab Qualification Test Program	10/172	

[redacted]

2.4 NON-DETECTION TEST OUTLINE

TSL developed and applied the *non-detection requirement* test procedure defined in Table 1, Record # 8 demonstrating key features, attributes and functions, and reporting the results in Table 1, Record #13. L3 supplied 3rd party test reports (Table 1, Record # 14) to supplement these verification activities.

2.5 OTHER TESTING

2.5.1 FDA Study

At TSA's request, TSL sponsored studies by the Food & Drug Administration to measure the emissions of the ProVision 100 AIT B3 49 U.S.C. § 114(r)

Test method and results are reported in Table 1, Record #16). B3 49 U.S.C. § 114(r)

B3 49 U.S.C. § 114(r)

2.6 CONFIGURATION IDENTIFICATION

Table 2 lists the configurations of the 3 ProVision 100 AITs with ATR at the TSL – 2 bailment agreement units and one TSA-owned unit. B3 49 U.S.C. § 114(r)

Table 2. Configuration ID

MODEL #	SERIAL #	LOCATION	ATR SOFTWARE VERSION
ProVision SC-100	B3; 49 U.S.C. § 114(r)		
ProVision SC-100			

2.7 DATES OF ACTIVITIES

Table 3 lists key events and their approximate dates.

Table 3. AIT-ATR QT&E of the L-3 ProVision 100 - Activities and Dates

Activities	Dates
B3; 49 U.S.C. § 114(r)	

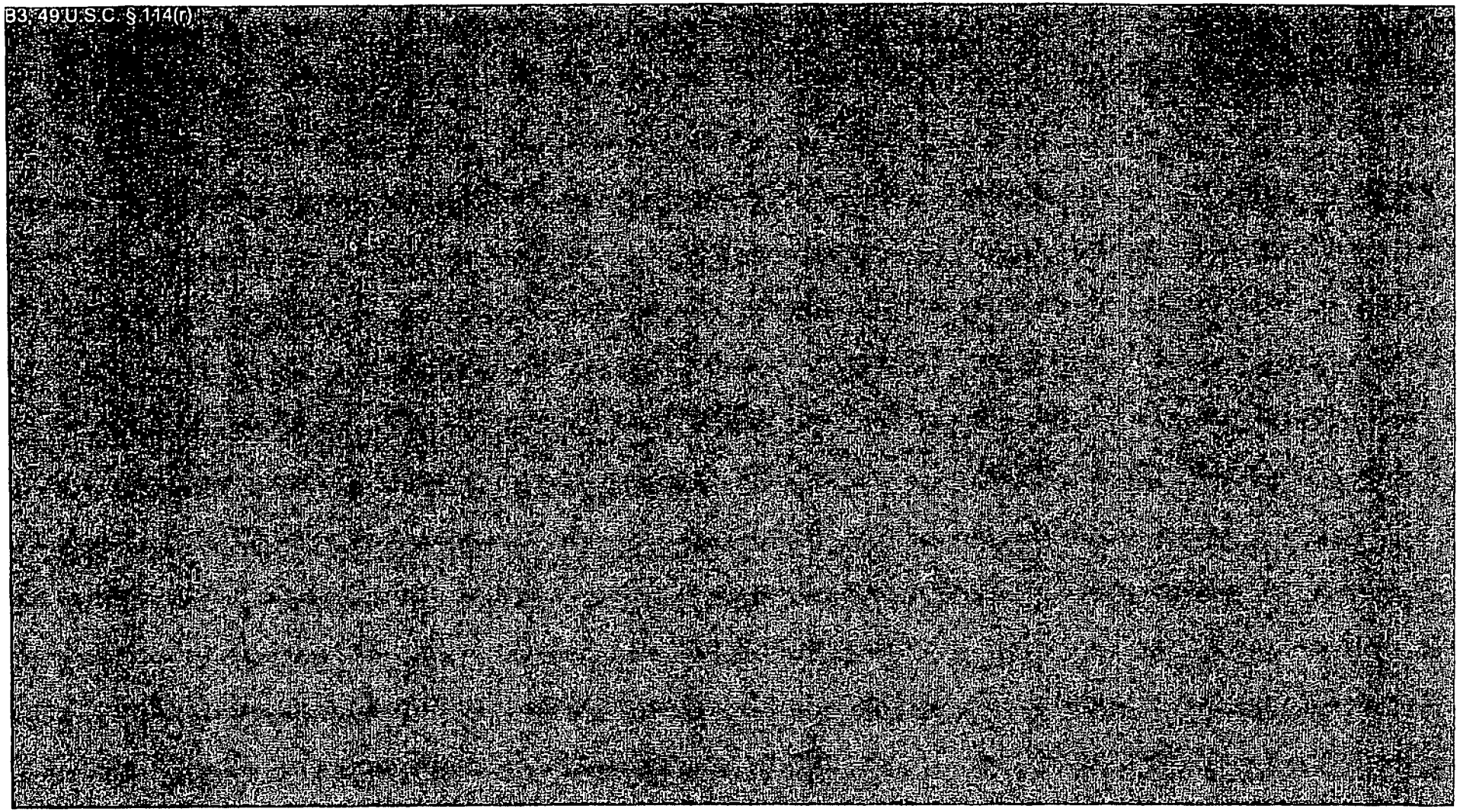
Activities	Dates
Non Detection Testing B3 49 U.S.C. §	B3 49 U.S.C. § 114(r)
Environmental Testing (at Dayton T. Brown)	
Location Accuracy Testing Part II and Analysis	
Follow-on Environmental Test Analysis & Reporting	
Related Parallel Efforts: B3 49 U.S.C. § 114(r)	
Study, Blue Decal Effect, Lab Assessment of ATR	
B3 49 U.S.C. § 114(r)	
Emerging Results Briefing to TSA	
Emerging Results Briefing to TSA - Updated	
Final Compilation & Review of all Test Records & Reports	

3. RESULTS

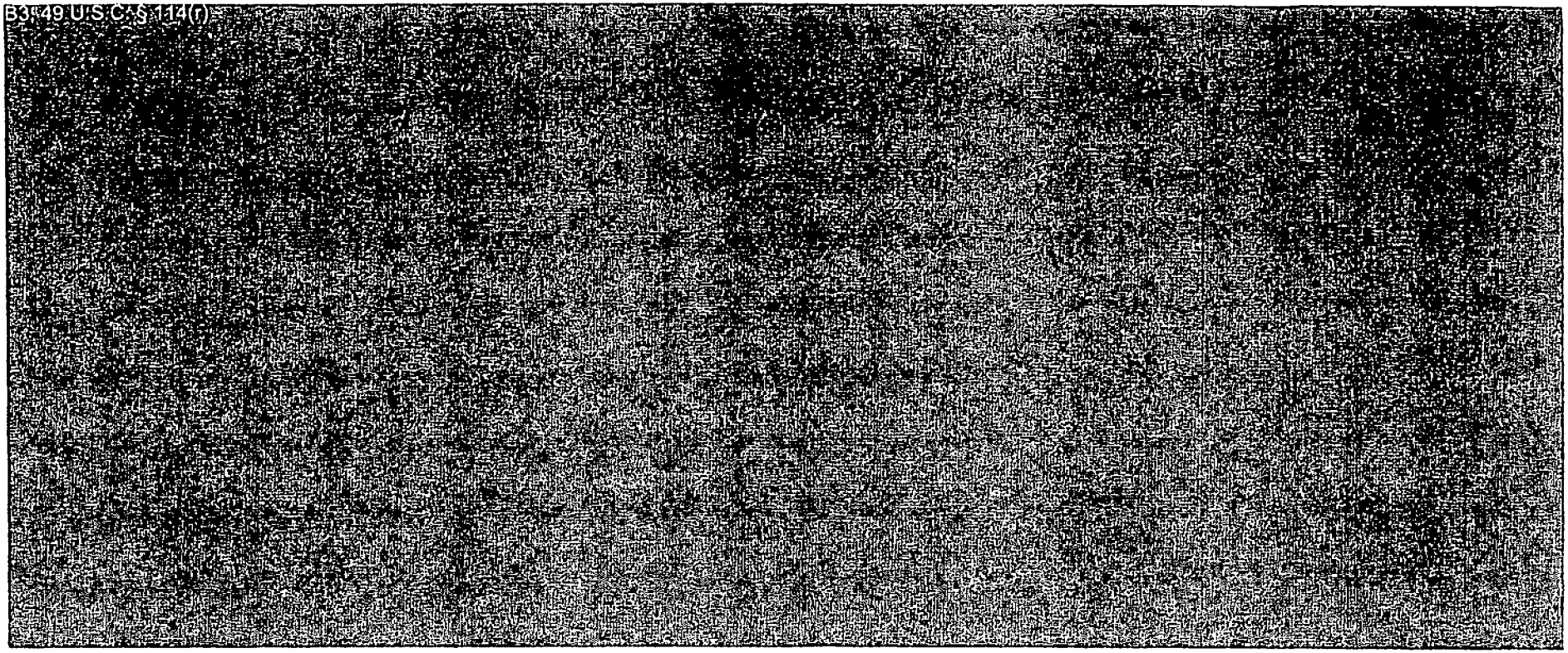
The Transportation Security Laboratory's Independent Test & Evaluation Group found that the L3 ProVision 100 AIT-ATR B3 49 U.S.C.

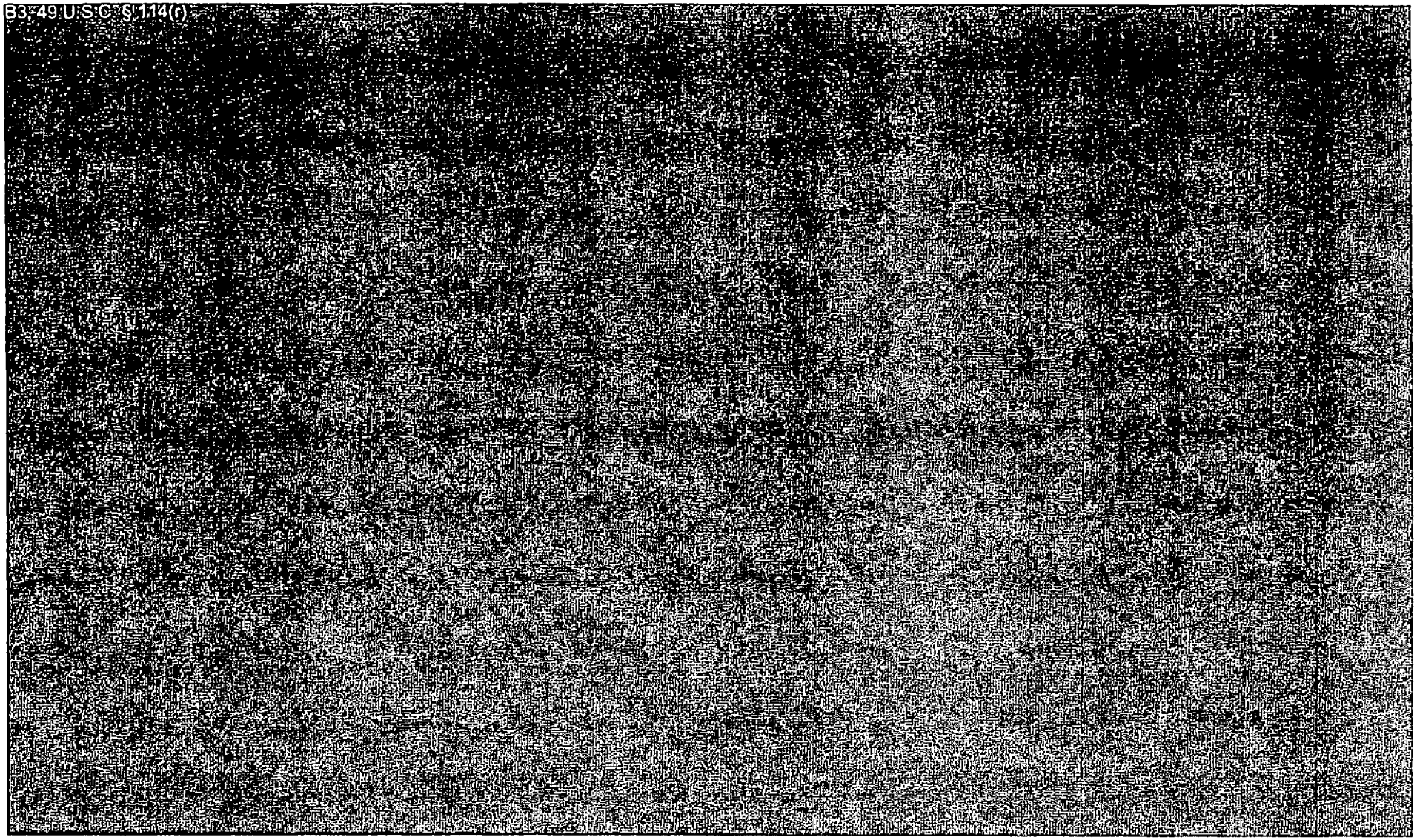
- Met B3 49 U.S.C. § standard defined by TSA B3 49 U.S.C. § 114(r)

B3 49 U.S.C. § 114(r)



SENSITIVE SECURITY INFORMATION





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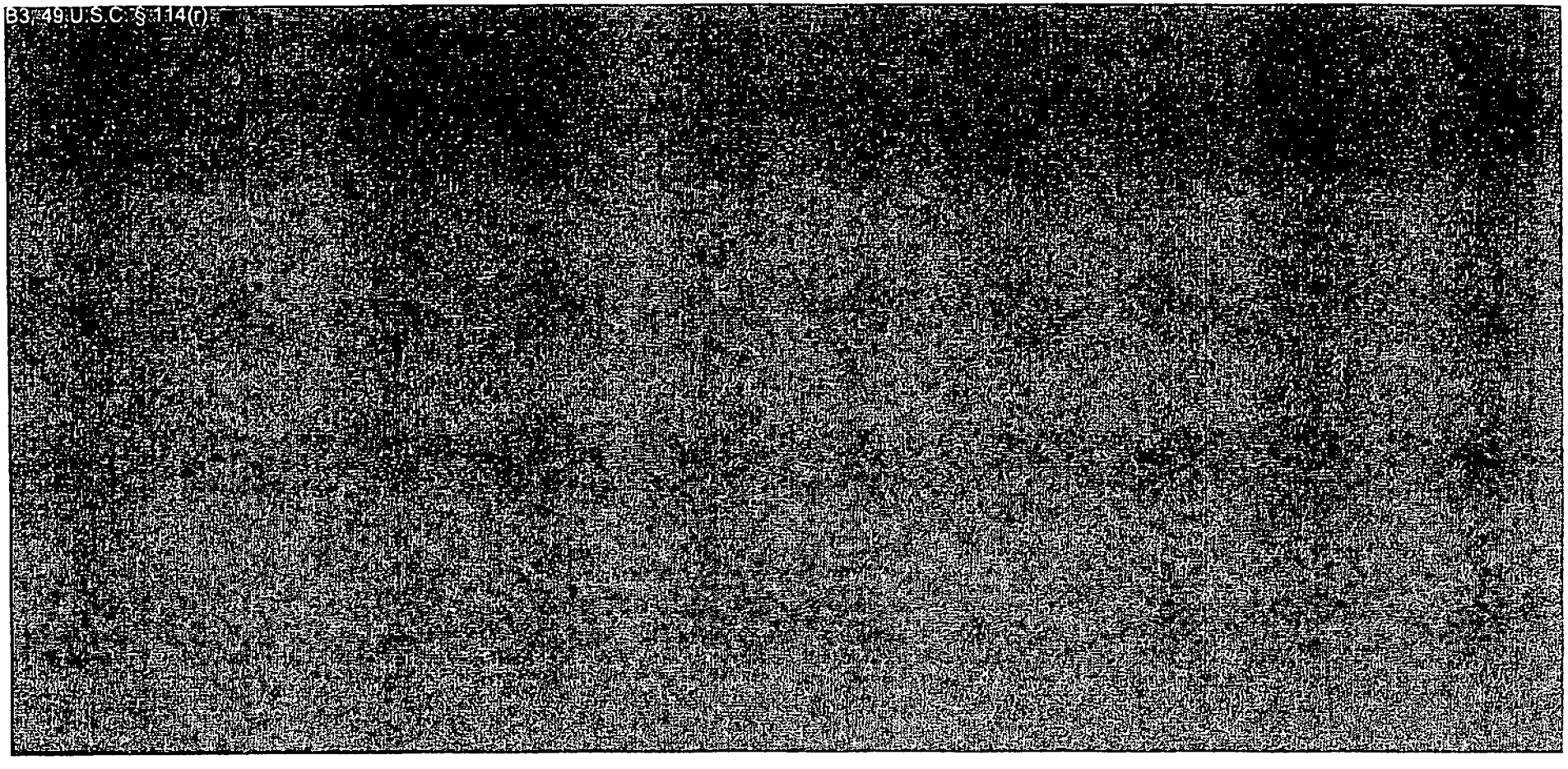

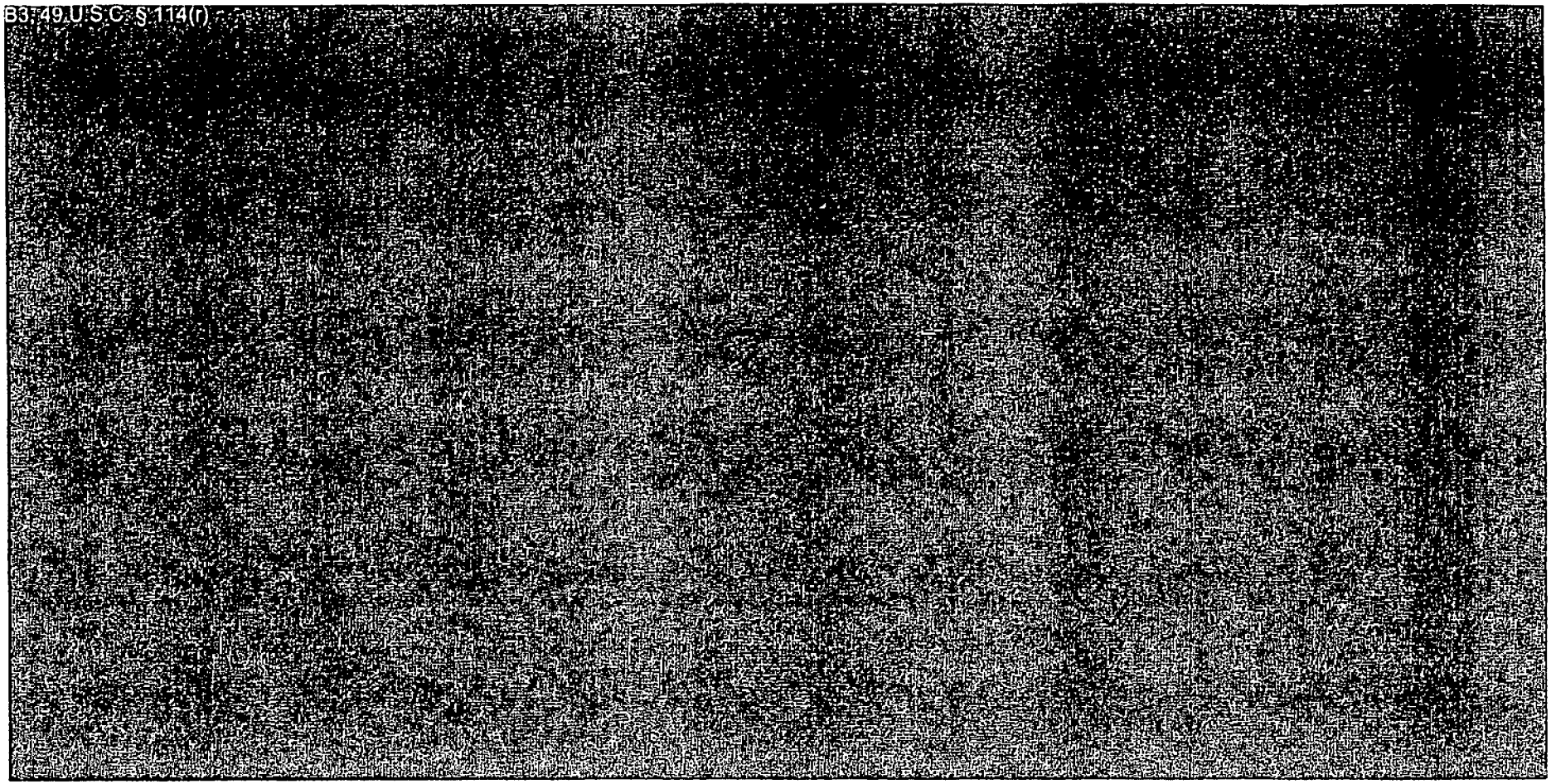

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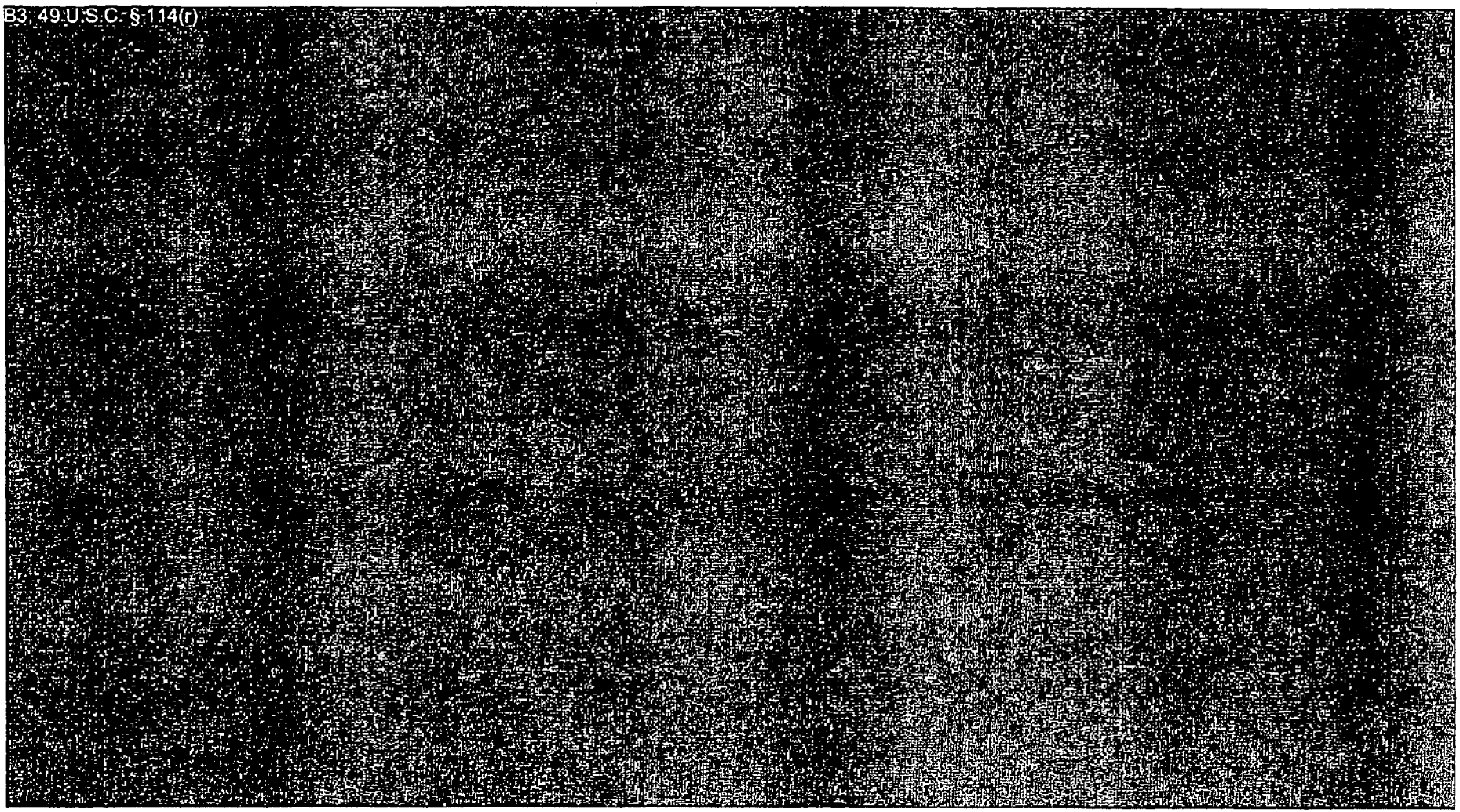

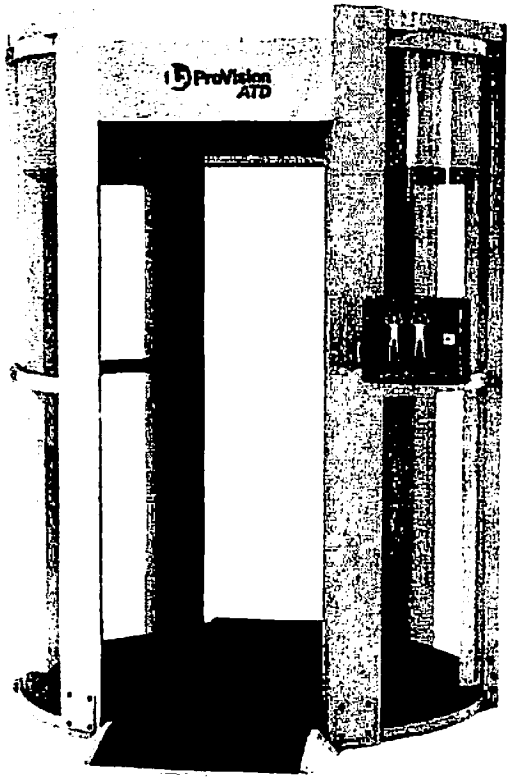

Figure 1. L-3 Communications ProVision 100 (photo from L-3 QDP)

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APPENDIX A - CROSS INDEX OF REQUIREMENTS, RESULTS AND TEST PROCEDURES

DTP/R = Detection Test Procedure / Record

NTP/R = Non-detection Test Procedure / Record

B3, 49 U.S.C. § 114(r)

Req. #	FRD Requirement	Evaluation	Test Procedure / Record Reference
FRD 1	The AIT system with ATR functionality shall be based on an AIT which has met the requirements of the AIT Procurement Specification, Procurement Specification For Advanced Imaging Technology (AIT) For Checkpoint Operations.	B3, 49 U.S.C. § 114(r)	
FRD 2	The AIT system with ATR functionality *shall* not require the Screening Operator (SO B3, 49 U.S.C. § 114(r)		
FRD 3	The AIT system with ATR functionality *shall* meet the Probability of Detection (Pd) as defined in B3, 49 U.S.C. § 114(r)		

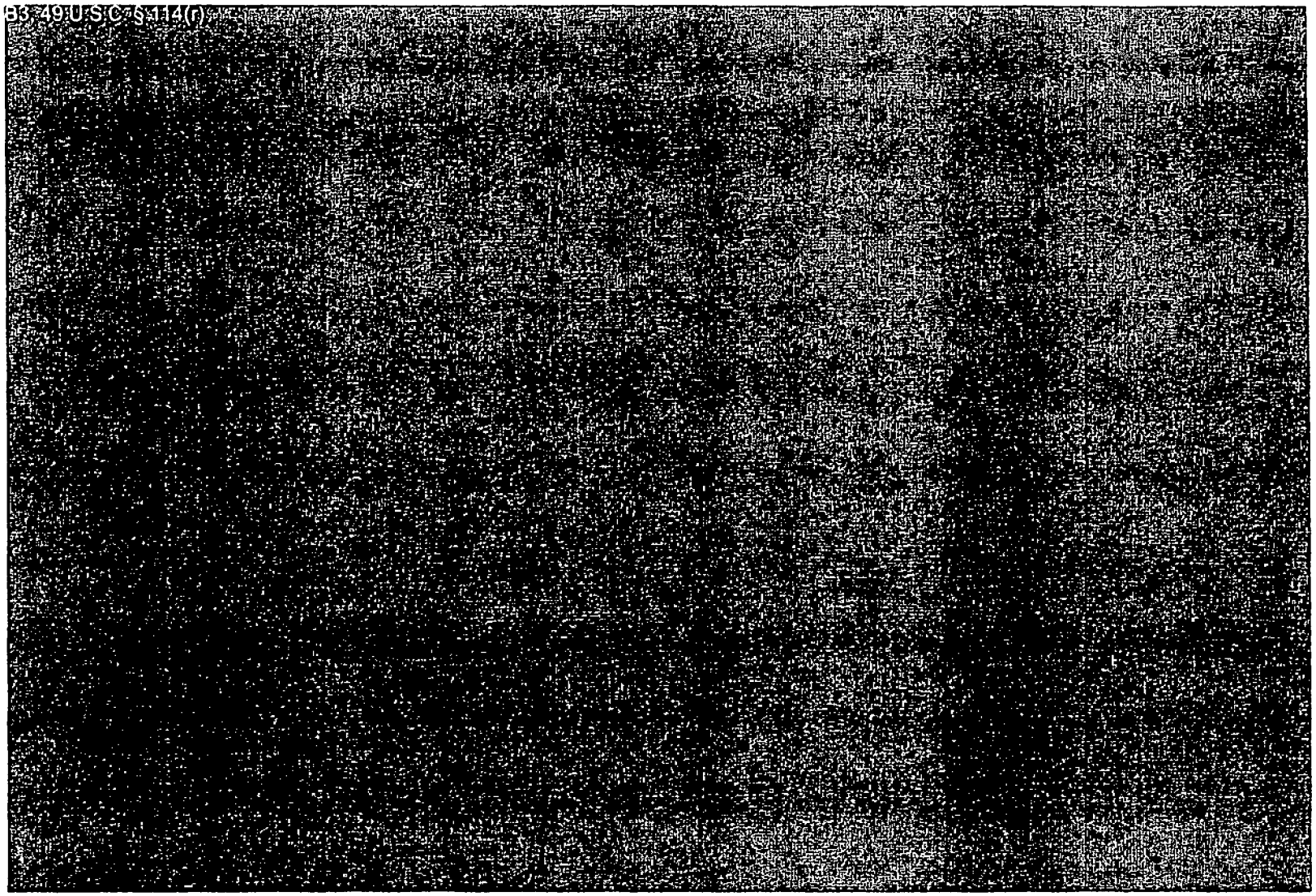
B3, 49 U.S.C. § 114(r)

Req. #	FRD Requirement	Evaluation	Test Procedure / Record Reference
83	49 U.S.C. § 114(r)		

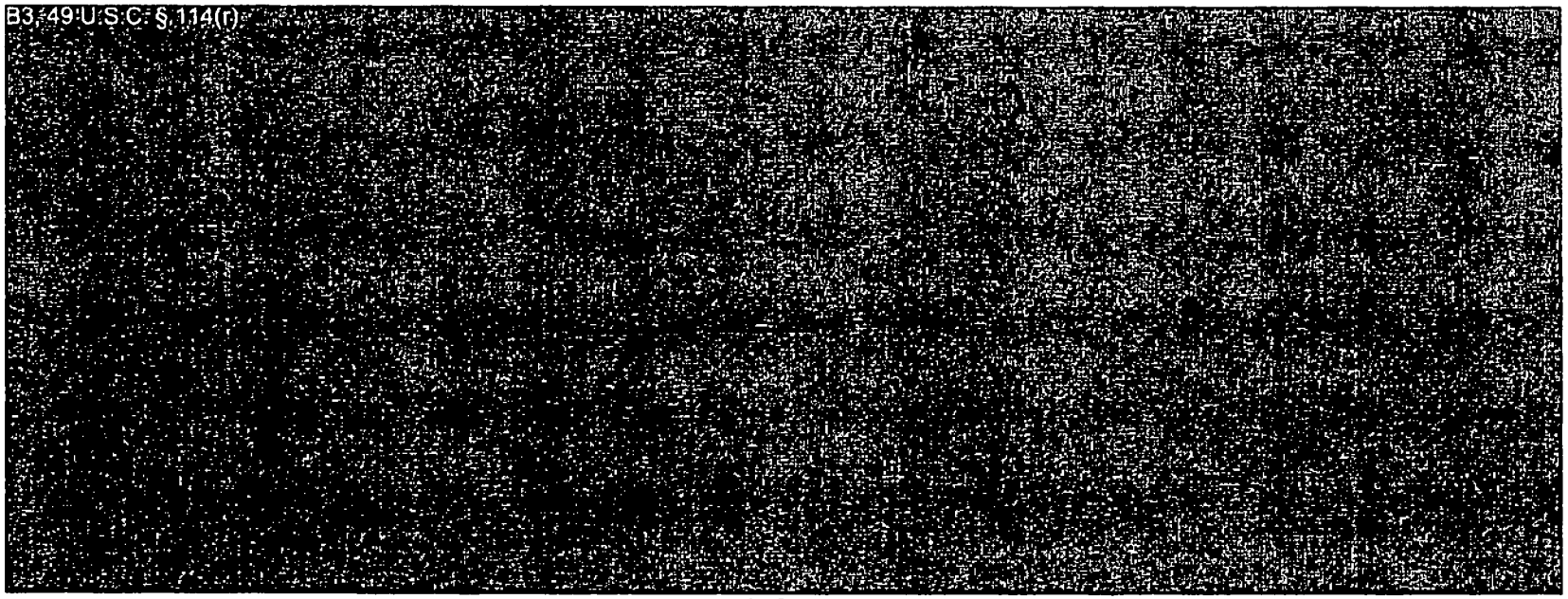
Req. #	FRD Requirement	Evaluation	Test Procedure / Record Reference
FRD 9	The false alarm rate (Pfa) for an AIT system with ATR functionality *shall* be in accordance with the value defined [redacted]	[redacted]	[redacted]
FRD 10	The AIT system with ATR functionality *shall* provide at least the two (2) gray-scale representative human figure images shown in Figure 1. This is in order to present scanning results to the screening operator, one of the "front view" and one of the "back view."		
FRD 11	The representative human figure image *shall* [redacted]		

[redacted]

Req. #	FRD Requirement	Evaluation	Test Procedure / Record Reference
B3, 49 U.S.C. § 114(r)			
FRD 15	The anomaly location indicator *shall* be at least one yellow filled box with a red border on the representative human figure in the area where each anomaly is located.	B3, 49 U.S.C. § 114(r)	
B3, 49 U.S.C. § 114(r)			



Req. #	FRD Requirement	Evaluation	Test Procedure / Record Reference
FRD 79	The SO Station *shall* provide a means to clear the scan results from the representative human figure images by pressing a clear button at the SO Station.	B3, 49 U.S.C. § 114(r)	B3, 49 U.S.C. § 114(r)



Req. #	Requirement	Evaluation	Test Procedure / Record Reference
PS 41	The AIT system *shall* provide a message indicating to the operator that re-calibration is necessary		
PS 109	The total floor loading of the AIT system *shall* not exceed 416.04 kg/m2 (85 lbs/ft2) based on the actual foot print dimensions.		
PS 112	The AIT system footprint *shall* be less than 4 square meters.		
PS 114	The AIT system height *shall* be less than 3 m.		
PS 115	The AIT system width *shall* be no greater than 2.25 m.		
PS 124	The AIT system *shall* be capable of operating between 0° and 32° Celsius (32° and 89.6° Fahrenheit) and 10% to 80% relative non-condensing humidity, without affecting performance.		
PS 152	The maintenance doors *shall* be either removable or sliding with a key lock and handles.		
PS 157	The AIT system must provide Built In Testing (BIT) diagnostic capabilities that *shall* initiate on power-up.		

[redacted]

Req. #	Requirement	Evaluation	Test Procedure / Record Reference
PS 158	The AIT system must provide Built In Testing (BIT) diagnostic capabilities that *shall* monitor system health [redacted]	[redacted]	[redacted]

Req. #	Requirement	Evaluation	Test Procedure / Record Reference
[redacted]	[redacted]	[redacted]	[redacted]