DON Improper Payment Information Act
FY 2014 Annual Sample Plan
Commercial Payments
In Navy Enterprise Resource Program (ERP)

Purpose

This plan supports the review of DON internally entitled (computed) contract and vendor payments within the Navy Enterprise Resource Planning (ERP) system. Reviews are conducted on a monthly basis by each respective site's Improper Payment Information Act (IPIA) review team.

The purpose of the sampling plan is to provide the background and a methodology to support annual population estimates and applicable confidence intervals, within specified sampling probability (95%) and precision levels (+/-3.0%), of the percentage of DON's internally entitled contract and vendor paid invoices within Navy ERP.

This sampling plan assumes the maximum sample size for annual estimates of improper payment rates at the Command level, per Office of Management and Budget (OMB) Circular A-123, Appendix C (Rev. April 14, 2011), whereby the occurrence rate is estimated at 50 percent.

This sampling plan also serves as a means to collect data on sampled payments regarding the accuracy of DON internally-entitled (computed) contract and vendor pay and assess the amount and reason for any over or underpayment, recovery and reconciliation, to satisfy improper payments reporting requirements per Improper Payments Elimination and Recovery Act (IPERA, P.L. 111-204) and guidelines from the OMB, Circular A-123, Appendix C.

With this submission, the DON requests approval from the Office of Management and Budget (OMB) of the annual sample size and allocation of samples for IPIA testing for the year in question.

Governing Laws and Regulations

In October of 2011, the DOD Financial Management Regulation (FMR) Volume 4, Chapter 14, was revised to include the requirement to perform Improper Payment reviews of commercial payments to contractors and vendors made out of the Department of the Navy's (DON's) Enterprise Resource Program (ERP). Furthermore, Appendix C of OMB Circular A-123 provides additional guidance on confidence levels and precision standards.

Identification of Universe

Using prescribed guidance, the DON identified the universe of commercial payments and categorized it by the following stratum: 1) pay category; 2) IT System; 3) locations; and 4) certifying agency. It is important to note that IPIA samples were drawn from the entire universe of DON commercial payments without excluding transactions based on payment type or other considerations that could be justified through a documented risk assessment.

Table 1.		
Navy ERP Universe and Dollar Value of Unique Payments		
Command	Grand Total FY 2013 # of Unique Payments (Y,C,D)	Grand Total FY 2013 Sum of Unique Payments
NAVAIR	66182	344,244,503.05
NAVSUP	19395	193,413,065.19
SPAWAR	29599	255,276,614.59
NAVSEA	86753	2,131,970,513.03
ONR	964	1,341,923.73
SSP	2485	17,987,869.97
	205378	2,944,234,489.56

DON's Navy ERP Commercial Payments Sample Design for FY 2014

The sampling plan is a stratified simple random sample attribute type design of DON commercial payments internally entitled in Navy ERP with proportional allocation among Commands. Multiple layers of stratum are identified to break the universe into groups (strata) on the assumption that the characteristic of interest varies more widely between groups than within groups. These layers of strata include: payment type – Commercial Pay; IT System – Navy ERP; Certifying agency – DFAS/Navy ERP; and DON Command.

The DON used random samples to achieve external validity because commercial payments in Navy ERP constitute a homogenous population. This also precludes the need to divide the transaction universe into dollar value stratum because any root cause for the improper payment would be the same regardless of the dollar value of the transaction.

Other Considerations to Ensure Adequacy of Test Procedures

In addition to applying the OMB requirements and varying strata techniques, we also identified and documented the potential impact of other factors such as the volume of other IPIA samples being tested, cost benefit of testing, and known error rates from past IPIA reviews as part of our IPIA methodology. These other considerations are identified and included in the documentation supporting the Annual Sampling Plan even though the sample sizes were not reduced by these risk assessment factors. Had the DON taken the results of their risk assessment into consideration when designing the ASP, the number of samples ultimately identified would be reduced. The DON chose to maintain the higher number of samples in their IPIA Sample Plan.

The DON Navy ERP sampling plan will be reviewed at least annually to reflect most recent volume and error trends to allow for projections within planned sample precision levels.

Sample Size Calculation

The sample size for IPIA commercial payments is calculated on an annual basis by applying OMB prescribed precision standards (confidence level of 95 percent and confidence interval of 3 percentage points) applied to the universe of unique commercial payments (FY 2014 universe to include purchase cards) made to individuals, organizations, and contractors made in the preceding year.
In order to identify these payments, the universe of payments is identified and attributed to each certifying agency (if applicable) to ensure proper segregation and avoid any duplicate testing.

Table 2: Formula for Calculating Sample Size

Formula for Infinite Poplulation

$$n = \frac{t^2 * p (1-p)}{m^2}$$

Formula for Finite Population

N= n/1(1+(n-1)/population

Variable		Sample
n	Sample Size - infinite	
t	Confidence level @0.95	1.96
t^2		
p	% of population	0.5
1-p		0.5
m	margin of error	0.03
m^2		0.0009
n	Calculated	1,067
	Population Size	185,983
N	Sample Size - finite	1061

Procedure

The DON is to comply with the requirements of the Improper Payments Information Act of 2002 (IPIA) (Pub. L. No. 107-300) which aims to reduce improper payments by the Federal government to individuals, organizations, and contractors. The IPIA specifically requires the DON to obtain a statistically valid estimate of the annual amount of improper payments in programs and activities and implement a plan to reduce erroneous payments.

IPIA Sample Selection

The total sample size identified is allocated based on percentage of unique payments by DON Commands. The calculation of IPIA sample size for FY 2014, is shown in Table 3, along with the monthly sample allocation among the Commands in Navy ERP is in Table 4. Samples are allocated among the following 3 Navy Commands: Naval Air Systems Cmmand (NAVAIR), Naval Sea Systems Command (NAVSEA), and Space and Naval Warfare (SPAWAR). DON Navy ERP IPIA testing for FY 2014 will not include samples for Strategic Systems Programs (SSP) and Office of Naval Research (ONR). Commands with less than 1 percent of total paytments are excluded from IPIA reviews so as not to impose an administrative burden.

Table 3.

IPIA 2014 Sample Size Calculation Navy ERP Commercial Payments	
Confidence Lenvel	95%
Confidence Interval	3%
Population	185983
Annual Sample Size	1061
Divided by 12	88

Table 4.

Navy ERP Universe of Unique Payments
Allocation of Smaple Size by Command

Command	Grand Total # of Unique Payments	Percentage Allocation	Monthly Samples by Command
NAVAIR	66,182.00	0.322244836	32
NAVSUP	19,395.00	0.094435626	0
SPAWAR	29,599.00	0.144119623	14
NAVSEA	86,753.00	0.422406489	42
ONR	964.00	0.004693784	0
SSP	2,485.00	0.012099641	0
	$ 205,378.00		88
Sample Size Required			88

Payment Selection

Selection of payments for review is performed using Random Number Generator (RNG) from Excel, ACL, EZ Quant, www.randomizer.org, or other acceptable sources.

Treatment of Missing Payments

It is unlikely that a sampled payment would not be available for review (i.e., missing or non-existent payment documentation). The impact of missing records (no data) influences the precision of the sample statistic as an estimator of the population proportion of records in error, dollar value of over and under payments and dollar value of the overall sample. As such, bias can become a factor in the sample statistic as a population estimator. There are a number of methods available to address missing records, but the most appropriate will depend upon the circumstances surrounding number and type of missing records. Desk procedures have been developed and provide guidance on how to address missing records.

Improper Payment Estimation

If the review of statistically selected samples from the universe of payments determines that any payment should have been paid at an amount different than what was paid (over or under), then only the difference between the total amount actually paid, and the amount that should have been paid, will be used in the calculation of the dollar error rate. The samples are drawn to estimate the percentage of paid invoices in error and to estimate the dollar value of improper over and under payments using auxiliary data captured from the sample for annual IPERA reporting.

The paid invoice error rates are estimated by $\hat{p} = \sum_{i=1}^{H} \frac{N_h}{N} \hat{p}_h$

$$SE(\hat{p}) = \sqrt{\sum_{h=1}^{H} \left(1 - \frac{n_h}{N_h}\right) \left(\frac{N_h}{N}\right)^2 \frac{\hat{p}_h(1-\hat{p}_h)}{n_h - 1}}$$

Where H = number of strata

N = total population of paid invoices

N_h = total population of stratum "h"

n_h = sample size of stratum "h"

p_h = error rate of stratum "h"

The approximate 95% confidence interval is: $\hat{p} \pm z\alpha_{/2} SE(\hat{p})$

The program improper payment estimates are calculated by: $\hat{Y} = \sum_{h=1}^{H} \frac{\sum y_{hi}}{\sum x_{hi}} X_h$

where X_n= total payment amount for stratum "h"

X_{ni} = i^{th} sample payment amount for stratum "h"

y_{ni} = i^{th} sample payment improper amount for stratum "h"

The improper payment estimates are calculated as the gross total of both under and over payment estimates. The program improper payment rate is the estimated improper payment total ($\hat{Y}$) divided by the total universe of payments (X).