IEEE-USA E-Books

2011 EDITION

IEEE-USA Consultants Fee Survey Report

IEEE-USA's Consultants Fee Survey Report, 2011 Edition, focuses on the compensation of U.S. members of IEEE. IEEE prepared the summary report.

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Executive Summary

IEEE-USA has conducted surveys of the compensation of IEEE's U.S. members since 1972. Separate surveys focusing on the compensation of consultants were implemented in 2002 and, with the exception of 2003, have been conducted annually ever since.

- In the spring of 2011, 17,426 IEEE U.S. members identified as consultants using the IEEE membership database were emailed an invitation to complete the *2011 Consultants Fee Survey.* Nine hundred and thirty-seven members participated in the survey (response rate = 5.4). All findings in this report represent only those who were identified as self-employed consultants; defined as the 782 individuals who indicated that 50% or more of their consulting hours came from working independently, with partners, or incorporated (from herein referred to as "consultants").
- The age of the average (mean) consultant is 60 years old. As with the IEEE membership in general, the vast majority of consultants are male (95%). Nearly nine in ten (92%) of consultants self-identify as non-Hispanic white.
- On average, consultants have 25 years of experience in the profession, and 15 years experience in consulting.
- One in five consultants holds a Ph.D. Thirty percent of consultants' highest degree is a Masters, more than half of which is a MSEE or MSCE (17%). Over a third of consultants' highest degree (36%) is a Bachelors; 28% of which is either a BSEE or a BSCE.
- Approximately a quarter of consultants indicated that their area of expertise before becoming a consultant was Systems Engineering (29%) or Computers (25%).
- Most consultants (81%) work out of a home office, and about half work solely as an independent consultant (48%). The majority (63%) of consultants' business comes from repeat clients.
- The median hourly rate charged by consultants is $125. About 1 in 5 consultants (21%) charge $200 or more per hour. Median hourly wage correlates positively with number of years of experience in consulting. The rate is $117 for consultants with less than 5 years experience, and increases 28.2% to $150, for those with 25 years of experience or more.
- When education levels are examined, those holding a Ph.D. boast the largest median hourly rate at $175. Achieving an MBA also translates to a higher than average rate, at $150 per hour. Holding a Professional Engineer's (PE) license is also associated with a modest increase in median hourly rate at $126 per hour.
- Sector also affects hourly rate. Those who work with clients in the private industry, defense charge $150 per hour and those in utilities charge $140 (both above the median, $125).

- Being in the Electrical/Electronic Manufacturing line of business also increases the amount consultants charge hourly (median = $150, a 20% increase from $125).
- When looking at the United States in terms of Census Regions, the Pacific (AK, HI, WA, OR, CA) has the highest average at $140. New England (CT, MA, ME, NH, RI, VT) is second at $132 per hour.

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1 Introduction

1.1 The Institute and IEEE-USA

IEEE-USA promotes the career and public policy interests of more than 210,000 U.S. members of the IEEE, the world's largest technical professional society, with a worldwide membership of more than 375,000 electrical, electronics, computer engineers and computer scientists in approximately 160 countries. The IEEE's constitution defines its purpose as "scientific and educational... [and] professional, directed toward the advancement of the standing of the members of the professions it serves; means to this end include, but are not limited to, the conduct and publication of surveys and reports on matters of professional concern to the members..." Pursuant to these purposes, IEEE-USA has conducted, analyzed, and distributed a salary and fringe benefit survey of IEEE members in the United States since 1972. And for seven out of the past ten years, it has expanded the information gathered about industry consultants, specifically.

1.2 The Survey

Invitations to the Web-based 2011 Consultants Survey were e-mailed in the spring of 2011, to 17,426 IEEE U.S. members. To create the sample, all records of higher-grade members — Associate Members, Members, Senior Members, and Fellows — who consent to receive email communications from IEEE, who indicated that their typical job function, responsibility, or title was consulting, were drawn from the member database. Members were emailed an online survey; all data for the 2011 survey was collected exclusively via the Internet.

A total of 937 usable responses to the survey were collected. All findings in this report represent only those who were identified as self-employed consultants; defined as the 782 individuals who indicated that 50% or more of their consulting hours came from working independently, with partners, or incorporated (from herein referred to as "consultants"). Estimates of proportions are subject to a maximum sampling error of ±3.43 percentage points at the 95% confidence level. Compensation results are reported in terms of percentiles, rather than proportions or means. Sampling error is not readily quantified for such statistics calculated from non-normal distributions.

As in any survey, results are somewhat less precise when the database is carved up into subgroups. Results based on rather small numbers of cases may still be of interest to IEEE's U.S. members, and are provided in this report, along with suitable cautions for care in their use. The minimal reportable group is fixed at 25 cases, a threshold selected as a common and reasonable lower limit for large-sample statistical procedures.

Exhibit 1-1

The Survey Data Base

Sampling Frame:

17,426 In the spring of 2011, IEEE-USA invited 17,426 higher grade members who consent to receive email communications, and are identified as someone whose typical job function, responsibility, or title was consulting in the IEEE member database, to participate in the Consultants Survey.

Survey Data:

937 Data was collected through online surveys. Final number of responses was 937 (response rate = 5.4%).

Categories of Respondents:

782 Self-employed consultants (reported here)

155 Defined as not self-employed

Trended Results. IEEE-USA has conducted surveys focusing on the compensation of consultants in 2002, 2004, 2006, 2007, 2009, and 2010. Other than 2009, all surveys were stand-alone surveys, and they were not a part of the overall *Salary & Fringe Benefits Surveys*.

In 2009, the two survey efforts were combined. As a result, the sampling frame and qualifying definition of "consultant" were changed from previous implementations. These changes may have affected survey results and caution should be used when making comparisons.

2 Consultant Profile

2.1 Demographics

Age and Gender. Over 95% of consultants are male. The average consultant is 60 years old. However, a quarter (25%) of consultants are 70, or older.

Exhibit 2-1

Age

Mean	60 years old
Median	61 years old
70 and up	25%
65-69	15%
60-64	13%
55-59	15%
50-54	13%
45-49	8%
40-44	5%
35-39	5%
30-34	2%
25-29	1%
Under 25	0%

Number of cases: 738

Ethnicity and Citizenship. Nine in ten consultants (92%) describe themselves as non-Hispanic whites. Asians or Pacific Islanders is the largest minority group among consultants, at 3%. Two percent identify as Hispanic and 1% identify as African American (not Hispanic origin). Another 3% classify themselves as an ethnicity "other" than those provided in the survey question.

Eighty-six percent are U.S. citizens by birth. Another 11% are naturalized citizens, while 2% are permanent resident aliens.

Exhibit 2-2

Ethnicity

White (not Hispanic origin)	92%
African American (not Hispanic origin)	1%
Hispanic	2%
Asian or Pacific Islander	3%
American Indian or Alaskan Native	0%
Other ethnicity	3%

Number of cases: 771

2.2 Experience, Education and Specialties

Experience. On average, consultants had 25 years in the profession. Men have had more experience than women; 79% of women have had less than 24 years experience, while only 48% of men had that amount of experience. Further, no women had greater than 35 years of experience, while 25% of men did have that much experience.

Exhibit 2-3

Years of Experience in the Profession

Mean:	25 years
Median:	25 years
45 or more	6%
40-44	9%
35-39	10%
30-34	13%
25-29	13%
20-24	12%
15-19	13%
10-14	11%
5-9	9%
Less than 5	5%

Number of cases: 764

Consultants have an average of 15 years of experience in consulting. Further, almost a fifth (19%) have been consulting for more than 25 years. Men have more years in consulting than women, with the female average being 13 years (two less than the average).

Exhibit 2-4

Years of Consulting Experience

Mean:	15 years
Median	13 years
25 or more	19%
20-24	12%
15-19	13%
10-14	24%
5-9	21%
Less than 5	11%

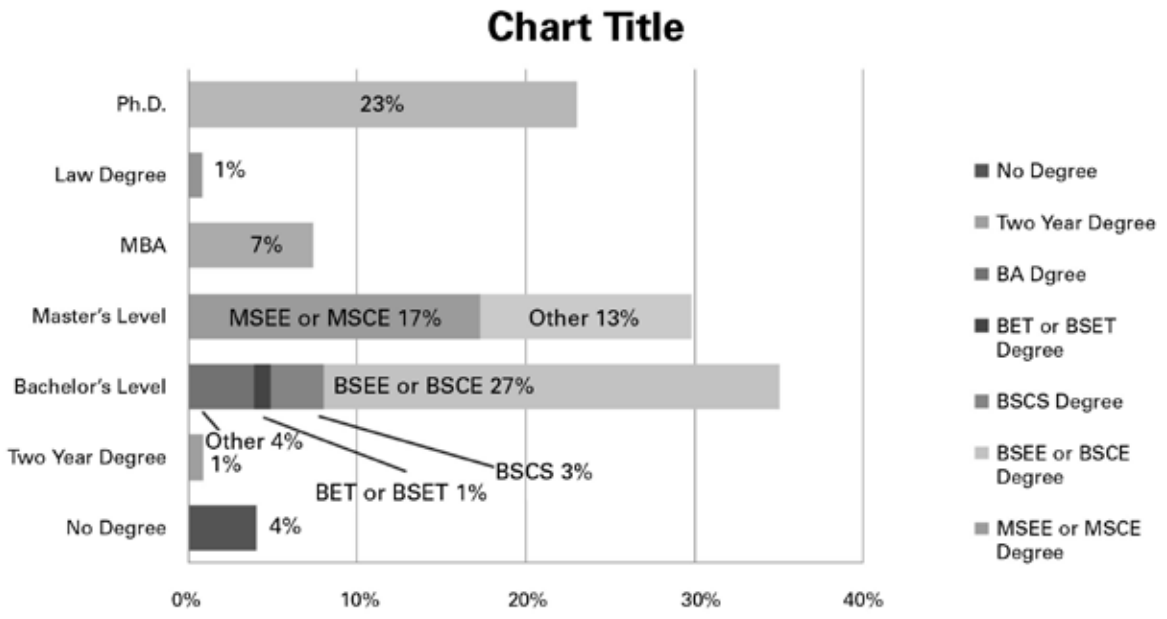
Number of cases: 774

Education and Certification. Almost a quarter of consultants hold a Ph.D. or equivalent (23%), while 30% of consultants' highest degree is a Master's. 35% of consultants' highest degree is a Bachelors, the majority being either a BSEE or BSCE (27%).

Although professional registration is a prerequisite for practice as an engineer in most countries in the world, registration has not been essential for most EEs in the United States. Currently, 30% of consultants are registered professional engineers (P.E.s).

Exhibit 2-5

Highest Degree Held



Number of cases: 930

NOTE: Within levels, degrees were ranked as they appear in the chart, left to right. For example, if a member had both an MSEE and an MBA, the MBA was counted as the higher degree. Distinctions within broad degree levels, e.g., among different kinds of Master's degrees, are necessarily somewhat arbitrary; the important differences are between the Bachelor's, Master's, and Ph.D. levels.

Technical Specialties. To better understand their areas of expertise, consultants were asked to select all the technical specialties (of 88 listed) in which they offer consulting services. The top four were each mentioned by over a fifth of consultants, Systems Engineering (29%); Computers (25%); Project Management (24%); and Software Development, Application & Management (22%).

Exhibit 2-6

Technical Specialties

Acoustics	4%
Aerospace	9%
Analog Design	13%
Antenna	7%
Application Software	18%
ASIC	3%
Automation	10%
Broadcast, Radio and Television	3%
Business Application & Management	7%
Business Planning	11%
C++	9%
CAD	5%
Circuits and Printed Circuit Design	11%
Client Server	7%
Communications	20%
Computers	25%
Consumer Electronics	9%
Databases and Data Management	11%
Diagnostic Software	3%
Digital Design	11%
DSP	8%
Electrical Power Generation Transmissions & Distributions	17%
Electrical Power Quality, Reliability and Safety	13%
Electrical Power Systems	22%
Electrical Power, Transformers, Switchgear and Controls	19%
Electro-Mechanical	9%
Electromagnetics, including EMI, EMC and EMP	9%
Electronic Components	8%
Embedded Systems, Hardware, Software and Controls	13%
Expert Witness	20%
Failure Analysis	20%
Fiber Optics	4%
Financial	4%
Forensic Engineer	7%
FPGA	5%
GPS	4%
Hardware, General	13%
Human Factors	6%
IC Design	3%
Illumination/Lighting	6%
Instrumentation and Controls	11%
LAN/WAN	13%
Languages	3%
Large Systems	7%
Lasers	3%
Linux	9%
Management	18%
Manufacturing	7%
Marketing	8%
Materials and Material Handling	3%
Mechanical	5%
Medical	9%
Microprocessors	11%
Microwave	8%
Military	7%
Motors	7%
MS Windows	11%
Networks - LAN/WAN - Other	13%
New Product Development	17%
Object Oriented	6%
Oceanic	2%
Optics	5%
Packaging	3%
Peripherals	3%
Power Supply Design	8%
Process Controls	8%
Project Management	24%
Quality and ISO-Related	5%
Radar	5%
Reliability and Availability	7%
RF	11%
Semiconductor Fab	2%
Servo/Control Systems	6%
Signal Conditioning	7%
Simulation and Modeling	14%
Software Development, Application & Management	22%
Systems Engineering	29%
Technical Writing	15%
Telecom and Telephone	10%
Telemetry	2%
Test Engineering Equipment or Services	12%
Testability	3%
Thermodynamics	2%
Training	15%
Troubleshooting	12%
Unix	7%
Vehicular	3%
Wireless Networks, Systems, Instrumentation	13%
World Wide Web	11%
Number of cases:	782

2.3 Type of Work

Work Setting. The work setting for most consultants (81%) is a home office.

A minority (38%) of consultants carry professional liability (errors & omissions) insurance.

About half (48.3%) worked solely as an independent consultant in 2010, while 37% didn't do any independent consulting that year, performing their consulting hours with partners, as a contract employee (job shopping), as an employee of another company (not their own), or incorporated.

As a group, when their 2010 consulting hours are allotted to each of these business structure categories, the average amount of time spent is mostly as an independent (66%), and about a quarter of their hours were considered incorporated (26%). Little time, overall, was spent with partners (7%), and even less as a contract employee or employee of someone else's company (1% for each).

Exhibit 2-7

Percentage of Hours by Category (Mean Summary)

An independent	66%
With partners	7%
Incorporated	26%
As a contract employee (job shopping)	1%
As an employee of another company (not your own)	1%
TOTAL	101%

*Total may not equal 100%, due to rounding to the nearest whole number.
Number of cases: 782

It should be noted that, as with most Consultants Fee Surveys conducted in previous years, the data reported here excluded individuals who indicated that a majority of their time was spent working as a contract employee, or as an employee of another company. Last year, however, they remained in the tabulation, so caution should be taken when comparing results. However, they represent a distinct minority of reported consultants.

Basis for Earnings. The majority of the average consultants' business (63%) comes from repeat clients. But, having outside connections is important, as significant earnings also come from referrals from clients and friends (18%) and contacts made by networking (12%).

Exhibit 2-8

Percentage of Earnings (Mean Summary)

Repeat business from your clients	63%
Client contacts made by networking	12%
Referrals from clients and friends	18%
Contacts through IEEE directories/databases	0%
Print advertising	1%
Cold calls	1%
A marketing or referral service with a fee	2%
Other	4%
TOTAL	101%

*Total may not equal 100%, due to rounding to the nearest whole number.
Number of cases: 780

Client characteristics. The majority of consultants (59%) work with private, non-defense companies; when defense-related firms are added in, the private industry share rises to 72%. No other sector was indicated by more than 12%.

Exhibit 2-9

Sector

Private Industry: Defense	13%
Private Industry: Other than Defense or Utilities	59%
Utilities	11%
Federal Government: Defense	4%
Federal Government: Other than Defense	4%
State or Local Government	1%
Educational Institution	4%
Non-Profit Institution: Except Education	1%
Other sector	4%
TOTAL	101%

*Total may not equal 100%, due to rounding to the nearest whole number.
Number of cases: 780

Reflective of the membership as a whole, consultants as a group work in a variety of lines of business, with no more than 15% in any single category.

Exhibit 2-10

Lines of Business

Aerospace	9%
Automotive	1%
Communications	9%
Computers	10%
Consulting	11%
Education	2%
Electrical/Electronic Manufacturing	16%
Electrical/Electronic Services	4%
Government and Military (except Aerospace)	6%
Medical	5%
Metals	1%
Power	4%
Petroleum/Chemical	2%
Transportation	1%
Utilities	7%
Other Line of Business	13%
TOTAL	101%

*Total may not equal 100%, due to rounding to the nearest whole number.
Number of cases: 779

Fields of Work. To better understand the types of work in which they are spending their time, consultants were asked to estimate the percentage of their consulting hours spent in each of several fields. On average, the most time was spent in Software (15%), followed most closely by Power (14%), and then Hardware (11%).

These averages present an abstract profile of all members, not any one individual. Of the 16 fields listed, all show less than 20% of consultants allotting any time.

Exhibit 2-11

Percentage of Hours by Field (Mean Summary)

Hardware	11%
Software	15%
Management	9%
Marketing	3%
Manufacturing	2%
ICs and devices	2%
RF	3%
Telecom	2%
IT	5%
Computers	3%
System Engineering	9%
Power	14%
Quality and Reliability	3%
Control Systems	3%
Expert Witness & Forensics	8%
Other	7%
TOTAL	100%

*Total may not equal 100%, due to rounding to the nearest whole number.
Number of cases: 778

3 Compensation

3.1 Billings/Rates

Billable Time. Consultants can choose to charge for their services in a variety of ways. Billing at an hourly rate is most common. About three-fourths (73%) of consultants, time was billed that way on average, and a majority of consultants (51%) billed only that way.

Quoting a fixed price is the next most common billing method, which accounted for an average of 19% of their time in 2010. Only a small part of their consulting time (8% on average) was charged using a daily rate.

On average, over a tenth (14%) of consultants are having trouble getting paid. Among those struggling with this issue, the majority (73%) indicated that the work they are having trouble getting paid for was performed under contract.

Exhibit 3-1

Billings Percentage (Mean Summary)

Hourly	73%
Daily	8%
Fixed price	19%
TOTAL	100.0%

Number of cases: 768

The average consultant billed 23 hours per week in 2010, far less than the standard 40 hours per week

Because they may not have all worked the same number of hours over the course of that year, the detailed compensation results summarized in the next section will focus on current hourly rates, rather than 2011 gross income, which would warrant a more unified base of full time workers to analyze fairly.

Exhibit 3-2

Billable Hours Per Week

Mean:	23 hours
Median:	20 hours
50 or more	6%
40 - 49	14%
30 - 39	19%
20 - 29	20%
10 - 19	18%
Less than 10	23%
TOTAL	100%

Number of cases: 782

Hourly Rate. Consultants were asked to indicate their current hourly rate for consulting by converting other rates to an equivalent hourly rate and using the average of the most common rate if theirs varied. According to this method, the typical (median) consultant indicated $125 per hour. Medians (and other percentiles) are the preferred measure for most analyses of income, because they are not affected by extreme cases as means would be.

Exhibit 3-3

Hourly Rate

Mean:	$153
Median:	$125
$200 per hour or more	21%
$175 - $199	9%
$150 - $174	14%
$125 - $149	16%
$100 - $124	18%
$75 - $99	14%
Less than $75 per hour	9%
TOTAL	101%

*Total may not equal 100%, due to rounding to the nearest whole number.
Number of cases: 767

3.2 DETAILED RESULTS

Where sufficient responses were received (n ≥ 25), five compensation statistics, including the median, are presented in this section, using the reported hourly rate data:

- lowest decile (10% earn less)
- lower quartile (25% earn less)
- median (50% earn less)
- upper quartile (75% earn less)
- highest decile (90% earn less)

These statistics are shown against many different characteristics (e.g., experience, education, types of clients, and location) to help understand what may drive variations in rates among consultants.

The Effect of Experience. More experience, as an example, could logically translate to an increase in hourly rate. And, to an extent, this appears to be the case for consultants. The typical consultant who has been in the profession 35 or more years reports a higher rate than those with less experience with the median hourly rate at $147 per hour ($21 an hour more than the median for those with less experience. No difference exists for those with 34 years of experience or less.

An upward trend exists when the data focuses on the number of years as a consultant (rather than in the profession). The typical rate begins at $117 per hour for those with less than five years of consulting experience and increases 28.2% to $150 per hour after 25 years.

Exhibit 3-4

Hourly Rate by Years of Experience in the Profession

	Number of Cases	*Lowest Decile*	*Lower Quartile*	*Median*	*Upper Quartile*	*Highest Decile*
Total Hourly Rate	767	$75	$100	$125	$180	$250
Less than 15 years	187	74	95	125	175	267
15 – 24 years	187	80	100	125	175	250
25 – 34 years	194	75	95	125	183	270
35 or more year	182	75	100	147	191	250

Exhibit 3-5

Hourly Rate by Years of Consulting Experience

	Number of Cases	*Lowest Decile*	*Lower Quartile*	*Median*	*Upper Quartile*	*Highest Decile*
Total Hourly Rate	767	$75	$100	$125	$180	$250
Less than 5	81	60	55	117	150	200
5 - 9	163	70	95	125	170	218
10 - 14	180	75	100	135	180	249
15 - 24	187	85	100	125	175	250
25 or more	149	84	100	150	250	300

Education and Hourly Rate. Education is another factor that was examined. In this case, those holding a Ph.D. boast the largest median hourly rate at $175. Achieving an MBA translates to a slightly higher than average rate, at $150 per hour.

Holding a Professional Engineer's (PE) license does not significantly affect the median hourly rate.

Exhibit 3-6

Hourly Rate by Highest Degree Held

	Number of Cases	*Lowest Decile*	*Lower Quartile*	*Median*	*Upper Quartile*	*Highest Decile*
Total Hourly Rate	767	$75	$100	$125	$180	$250
Ph.D.	171	100	125	175	250	365
MBA	57	75	100	150	184	300
MSEE or MSCE	128	75	95	125	150	200
Other Master's	96	65	100	125	179	250
BSEE or BSCE	206	75	100	125	150	200
Other Bachelor's	62	60	79	120	168	294

Exhibit 3-7

Hourly Rate by P.E. Licensure

	Number of Cases	*Lowest Decile*	*Lower Quartile*	*Median*	*Upper Quartile*	*Highest Decile*
Total Hourly Rate	767	$75	$100	$125	$180	$250
Licensed PE	293	80	100	126	179	240
Not	471	70	100	125	180	250

Variations by Sector and Line of Business. The following exhibits show variations for some basic characteristics of consultants' clients. There is some variation by sector, with the typical consultant serving clients on the defense side of the private industry billing more per hour than consultants in other areas of private industry ($150 compared to $125). Those working with clients in the Utilities industry report the second highest median hourly rate at $140.

Among the lines of business with sufficient response, the most lucrative for consultants to work in is Electrical/Electronic Manufacturing and Utilities (both with medians of $150, while those working in Medical typically bill the least per hour.

Exhibit 3-8

Hourly Rate by Sector

	Number of Cases	*Lowest Decile*	*Lower Quartile*	*Median*	*Upper Quartile*	*Highest Decile*
Total Hourly Rate	767	$75	$100	$125	$180	$250
Private Industry: Defense	98	80	119	150	176	228
Private Industry: Other than Defense or Utilities	451	75	100	125	175	250
Utilities	88	89	111	140	194	250
Other	128	65	95	125	184	250

Exhibit 3-9

Hourly Rate by Line of Business

	Number of Cases	*Lowest Decile*	*Lower Quartile*	*Median*	*Upper Quartile*	*Highest Decile*
Total Hourly Rate	767	$75	$100	$125	$180	$250
Aerospace	67	76	100	140	175	202
Automotive	3	-	-	-	-	-
Communications	70	91	104	140	200	298
Computers	76	60	85	125	186	425
Consulting	86	81	100	125	175	286
Education	17	-	-	-	-	-
Electrical/Electronic Manufacturing	124	78	100	150	200	273
Electrical/Electronic Services	29	75	92	112	133	180
Government & Military (except Aerospace	49	75	95	125	175	240
Medical	35	73	85	115	150	228
Metals	4	-	-	-	-	-
Petroleum/Chemical	19	-	-	-	-	-
Power	29	75	100	130	150	188
Transportation	6	-	-	-	-	-
Utilities	54	90	118	150	200	250
Other	96	65	95	125	185	265

Hourly Rate by Location. When looking at the U.S. in terms of Census Regions, the Pacific (AK, HI, WA, OR, CA) has the highest average at $140. New England (CT, MA, ME, NH, RI, VT) is second at $132 per hour.

Consultants whose largest number of clients are outside of the United States, on average, bill the highest at $160. When examined by the location of the largest number of their clients within the United States, those whose largest number of clients are in the South Atlantic have the highest average, at $140.

Exhibit 3-10

Hourly Rate by Office Location, U.S. Census Region

	Number of Cases	*Lowest Decile*	*Lower Quartile*	*Median*	*Upper Quartile*	*Highest Decile*
Total Hourly Rate	767	$75	$100	$125	$180	$250
New England	70	63	100	132	180	250
Middle Atlantic	91	70	100	130	180	247
East North Central	64	78	95	120	150	184
West North Central	43	72	90	125	175	254
South Atlantic	131	65	95	125	180	300
East South Central	15	-	-	-	-	-
West South Central	81	61	100	130	155	245
Mountain	77	74	100	125	200	300
Pacific	177	84	100	140	197	255

Exhibit 3-11

Hourly Rate by Location of Largest Number of Clients, U.S. Census Region

Number	*Lowest of Cases*	*Lower Decile*	*Quartile*	*Upper Median*	*Highest Quartile*	*Decile*
Total Hourly Rate	767	$75	$100	$125	$180	$250
New England	54	65	100	128	177	250
Middle Atlantic	78	70	90	125	182	250
East North Central	63	75	95	120	150	213
West North Central	43	72	85	125	155	225
South Atlantic	124	75	100	140	180	250
East South Central	11	-	-	-	-	-
West South Central	81	60	100	126	165	229
Mountain	61	60	85	120	150	220
Pacific	189	90	100	135	193	300
Outside the US	27	87	110	160	200	340

Census Regions:
New England - Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut
Mid-Atlantic - New York, Pennsylvania, New Jersey
East North Central - Wisconsin, Michigan, Illinois, Indiana, Ohio
West North Central - Missouri, North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa
South Atlantic - Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida
East South Central - Kentucky, Tennessee, Mississippi, Alabama
West South Central - Oklahoma, Texas, Arkansas, Louisiana
Mountain - Idaho, Montana, Wyoming, Nevada, Utah, Colorado, Arizona, New Mexico
Pacific - Alaska, Washington, Oregon, California, Hawaii

4 Methodological Notes

4.1 Sampling and Response

Invitations to the Web-based 2011 Consultants Fee Survey were emailed in the spring of 2010 to 17,426 IEEE U.S. members. To create the sample, all records of higher-grade members — Associate Members, Members, Senior Members, and Fellows — who consent to receive email communications from IEEE who indicated that their typical job function, responsibility, or title was consulting were drawn from the member database. As noted in Exhibit 1-1, 5.4% of those invited responded, a total of 937 usable returns.

All findings in this report represent only those who were identified as self-employed consultants; defined as the 782 individuals who indicated that 50% or more of their consulting hours came from working independently, with partners, or incorporated. Estimates of proportions are subject to a maximum sampling error of ±3.43 percentage points at the 95% confidence level. Compensation results are reported in terms of percentiles, rather than proportions or means. Sampling error is not readily quantified for such statistics calculated from non-normal distributions.

As in any survey, results are somewhat less precise when the database is carved up into subgroups. Results based on rather small numbers of cases may still be of interest to IEEE's U.S. members, and are provided in this report, along with suitable cautions for care in their use. The minimal reportable group is fixed at 25 cases, a threshold selected as a common and reasonable lower limit for large-sample statistical procedures.

The descriptive statistics reported include percentages; measures of central tendency such as means and medians; and measures of dispersion such as ranges and percentiles. Percentages in tabulations are rounded to the ones place, in recognition of the larger-magnitude effects of sampling error. Means — arithmetic averages — appear only occasionally, as they are not a preferred measure for analysis of income. Means tend to be biased high because of the undue influence of very large values at the top of a distribution.

Medians and other percentiles are points that divide a ranked distribution into equal-sized groups. The median divides a distribution in half; quartiles divide it into quarters; deciles divide it into tenths; percentiles divide it into hundredths. The median is also the second quartile, the fifth decile, and the 50th percentile. Interpolated values are used if necessary. For example, if the number of cases in a distribution is even, the median is the value half way between the two cases in the middle.

Appendix

2011 Compensation Survey

Thank you for choosing to participate in the 2011 IEEE-USA Consultant Fee Survey! This survey will take a few minutes to complete. If you need to leave the survey before completing it, you may return to the form by clicking on the link in the email invitation you received to participate in the survey. Please be assured that your personal information is confidential and secure. Your data is encrypted using 128-bit SSL (secure socket layer) protection. None of your individual data or contact information will be shared with any third party, nor used by IEEE-USA, except in connection with the writing of *IEEE-USA's Consultant Fee Survey Report.*

For questions related to the survey, please contact:

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1. *Did half or more of your personal earned income in calendar year 2010 come from fee-based consulting?*

❒ Yes ❒ No

2. *How many years of professional and/or managerial experience did you have in electrical, electronics, and computer engineering or related technical fields before you started fee-base consulting? Do not include undergraduate or graduate school as years of experience.*

Please round to the nearest whole number; enter 0 if you have six months or less experience.

❒ 1	❒ 8	❒ 15	❒ 22	❒ 29	❒ 45	❒ 52	❒ 59	❒ 66	❒ 73
❒ 2	❒ 9	❒ 16	❒ 23	❒ 30	❒ 46	❒ 53	❒ 60	❒ 67	❒ 74
❒ 3	❒ 10	❒ 17	❒ 24	❒ 31	❒ 47	❒ 54	❒ 61	❒ 68	❒ 75
❒ 4	❒ 11	❒ 18	❒ 25	❒ 32	❒ 48	❒ 55	❒ 62	❒ 69	
❒ 5	❒ 12	❒ 19	❒ 26	❒ 33	❒ 49	❒ 56	❒ 63	❒ 70	
❒ 6	❒ 13	❒ 20	❒ 27	❒ 43	❒ 50	❒ 57	❒ 64	❒ 71	
❒ 7	❒ 14	❒ 21	❒ 28	❒ 44	❒ 51	❒ 58	❒ 65	❒ 72	

3. *Check the one response that best describes the sector you worked in before becoming a fee-based consultant.*

- ❒ Private Industry: Defense
- ❒ Private Industry: Other than Defense or Utilities
- ❒ Utilities
- ❒ Federal Government: Defense
- ❒ Federal Government: Other than Defense
- ❒ State or Local Government
- ❒ Educational Institution
- ❒ Non-Profit Institution: Except Education
- ❒ Other sector, please specify_____

4.`*Check the one response that best describes the line of business of your primary employer(s) before you became a fee-based consultant.*

- ❒ Aerospace
- ❒ Automotive
- ❒ Communications
- ❒ Computers
- ❒ Consulting
- ❒ Education
- ❒ Electrical/Electronic manufacturing
- ❒ Electrical/Electronic services
- ❒ Government and Military (except aerospace)
- ❒ Medical
- ❒ Metals
- ❒ Power
- ❒ Petroleum/Chemical
- ❒ Transportation
- ❒ Utilities
- ❒ Other, please specify_____

5. *What was your IEEE Membership Grade as of January 1, 2011 (or as of the date you joined, if you joined after January 1, 2011)? (Note: "Life" is not a membership grade.)*

- ❒ Fellow
- ❒ Member
- ❒ Student Member
- ❒ Senior Member
- ❒ Associate Member
- ❒ Graduate Student Member

6. *As of January 1, 2011, what degrees did you hold? Select all that apply.*

- ❒ No Degree
- ❒ Two-year Degree
- ❒ BA Degree
- ❒ BET or BSET Degree
- ❒ BSCS Degree
- ❒ BSEE or BSCE Degree
- ❒ MSEE or MSCE Degree
- ❒ Other Master's Degree
- ❒ MBA Degree
- ❒ Law Degree
- ❒ Ph.D. or equivalent

7. Do you have a Professional Engineer's (P.E.) license?

❒ Yes ❒ No

8. What is your Gender?

❒ Male ❒ Female

9. As of January 1, 2011, what was your age? _____

10. What is your ethnicity?

❒ White (not Hispanic origin)
❒ African American (not Hispanic origin)
❒ Hispanic
❒ Asian or Pacific Islander
❒ American Indian or Alaskan Native
❒ Other ethnicity, please specify_____

11. As of January 1, 2011 please indicate your citizenship status.

❒ Citizen of the USA, by birth
❒ Citizen, by naturalization
❒ Permanent resident alien
❒ Visa Holder, H-1
❒ Visa Holder, other, please specify_____

ZipCode

Please enter the 5-digit zip code for your work location, or your primary employment (or self-employment) in calendar year 2010. If no such code applies, enter the zip code for your primary 2010 residence.

_____

13. What percentage of your time consulting do you bill in each of these ways? Please fill in each blank with a whole number. The total should add to 100%.

% hourly _____

% daily _____

% fixed price _____

14. During 2010, what was your average number of billable hours per week as a consultant? Please fill in a number below; 0, if none.

_____

15. Please select all of the technical specialties listed below in which you offer consulting services. Select all that apply.

❒ Acoustics
❒ Aerospace
❒ Analog Design
❒ Antenna
❒ Application Software
❒ ASIC
❒ Automation
❒ Broadcast, Radio and Television
❒ Broadcast, Radio and Television
❒ Business Application & Management
❒ Business Planning
❒ C++
❒ CAD
❒ Circuits and Printed Circuit Design
❒ Client Server
❒ Communications

- ❒ Computers
- ❒ Consumer Electronics
- ❒ Databases and Data Management
- ❒ Diagnostic Software
- ❒ Digital Design
- ❒ DSP
- ❒ Electrical Power Generation, Transmissions & Distributions
- ❒ Electrical Power Quality, Reliability and Safety
- ❒ Electrical Power Systems
- ❒ Electrical Power, Transformers, Switchgear and Controls
- ❒ Electro-Mechanical
- ❒ Electromagnetics, including EMI, EMC and EMP
- ❒ Electronic Components
- ❒ Embedded Systems, Hardware, Software and Controls
- ❒ Expert Witness
- ❒ Failure Analysis
- ❒ Fiber Optics
- ❒ Financial
- ❒ Forensic Engineer
- ❒ FPGA
- ❒ GPS
- ❒ Hardware, General
- ❒ Human Factors
- ❒ IC Design
- ❒ Illumination/Lighting
- ❒ Instrumentation and Controls
- ❒ LAN/WAN
- ❒ Languages
- ❒ Large Systems
- ❒ Lasers
- ❒ Linux
- ❒ Management
- ❒ Manufacturing
- ❒ Marketing
- ❒ Materials and Material Handling
- ❒ Mechanical
- ❒ Medical
- ❒ Microprocessors
- ❒ Microwave
- ❒ Military
- ❒ Motors
- ❒ MS Windows
- ❒ Networks - LAN/WAN - Other
- ❒ New Product Development
- ❒ Object Oriented
- ❒ Oceanic
- ❒ Optics
- ❒ Packaging
- ❒ Peripherals
- ❒ Power Supply Design
- ❒ Process Controls
- ❒ Project Management
- ❒ Quality and ISO-Related
- ❒ Radar
- ❒ Reliability and Availability
- ❒ RF
- ❒ Semiconductor Fab
- ❒ Servo/Control Systems
- ❒ Signal Conditioning
- ❒ Simulation and Modeling
- ❒ Software Development, Application & Management
- ❒ Systems Engineering
- ❒ Technical Writing
- ❒ Telecom and Telephone
- ❒ Telemetry
- ❒ Test Engineering, Equipment or Services
- ❒ Testability
- ❒ Thermodynamics
- ❒ Training
- ❒ Troubleshooting
- ❒ UNIX
- ❒ Vehicular
- ❒ Wireless Networks, Systems, Instrumentation
- ❒ World Wide Web

16. *Please specify below any additional technical specialties that did not appear in the above list, but in which you offer consulting services:*

_____

17. *Please indicate what percentage of your consulting hours were performed for each of the categories below during 2010. Please fill in each blank with a whole number. The total should add to 100%.*

% An independent _____

% With partners _____

% Incorporated _____

% As a contract employee (job shopping) _____

% As an employee of another company (not your own) _____

18. *Is your office in your home?*

❒ Yes ❒ No

19. *Do you carry professional liability (errors & omissions) insurance?*

❒ Yes ❒ No

20. *How do you get your consulting business? Estimate the percentage of total dollars earned from each of the following. Please fill in each blank with a whole number. The total should add to 100%.*

% Repeat business from your clients _____

% Client contacts made by networking _____

% Referrals from clients and friends _____

% Contacts through IEEE directories/databases _____

% Print advertising _____

% Cold calls _____

% A marketing or referral service with a fee _____

% Other _____

21. *How many years of consulting experience have you had? Please round to the nearest whole number; enter 0, if you have six months or less experience.*

_____

22. *What is your current hourly rate for consulting? Please convert other rates to an equivalent hourly rate. If your rate varies, select the average or most common rate. Please enter whole numbers, without a dollar sign or a comma.*

$ per hour _____

23. *What is the gross income that you received in 2010 from consulting? Please enter whole numbers, without a dollar sign or a comma.*

$ _____

24. *Estimate the percentage of your consulting hours that you do in the following fields. Please fill in each blank with a whole number; 0, if none. The total should add to 100%.*

% Hardware _____

% Software _____

% Management _____

% Marketing _____

% Manufacturing _____

% ICs and devices _____

% RF _____

% Telecom _____

% IT _____

% Computers _____

% System Engineering _____

% Power _____

% Quality and Reliability _____

% Control Systems _____

% Expert Witness & Forensics _____

% Other _____

25. Are you having trouble getting paid?

❒ Yes ❒ No

25 a) Was the work you had trouble getting paid for performed under contract?

❒ Yes ❒ No

25 b) Please indicate your comments here regarding these difficulties.

_____

_____

_____

_____

26. Where are the largest number of your clients located?

❒ In the United States or Canada ❒ Outside the United States or Canada

26 a) In what State/Province are the largest number of your clients located?

❒ Alabama ❒ Arkansas ❒ Connecticut ❒ Florida
❒ Alaska ❒ California ❒ Delaware ❒ Georgia
❒ Arizona ❒ Colorado ❒ District of Columbia ❒ Hawaii

- ❒ Idaho
- ❒ Illinois
- ❒ Indiana
- ❒ Iowa
- ❒ Kansas
- ❒ Kentucky
- ❒ Louisiana
- ❒ Maine
- ❒ Maryland
- ❒ Massachusetts
- ❒ Michigan
- ❒ Minnesota
- ❒ Mississippi
- ❒ Missouri
- ❒ Montana
- ❒ Nebraska
- ❒ Nevada
- ❒ New Hampshire
- ❒ New Jersey
- ❒ New Mexico
- ❒ New York
- ❒ North Carolina
- ❒ North Dakota
- ❒ Ohio
- ❒ Oklahoma
- ❒ Oregon
- ❒ Pennsylvania
- ❒ Rhode Island
- ❒ South Carolina
- ❒ South Dakota
- ❒ Tennessee
- ❒ Texas
- ❒ Utah
- ❒ Vermont
- ❒ Virginia
- ❒ Washington
- ❒ West Virginia
- ❒ Wisconsin
- ❒ Wyoming
- ❒ Alberta
- ❒ British Columbia
- ❒ Manitoba
- ❒ New Brunswick
- ❒ Newfoundland and Labrador
- ❒ Nova Scotia
- ❒ Northwest Territories
- ❒ Nunavut
- ❒ Ontario
- ❒ Prince Edward Island
- ❒ Québec
- ❒ Saskatchewan
- ❒ Yukon

26 b) In what country are the largest number of your clients located?

- ❒ Afghanistan
- ❒ Albania
- ❒ Algeria
- ❒ Andorra
- ❒ Angola
- ❒ Antigua & Deps
- ❒ Argentina
- ❒ Armenia
- ❒ Australia
- ❒ Austria
- ❒ Azerbaijan
- ❒ Bahamas
- ❒ Bahrain
- ❒ Bangladesh
- ❒ Barbados
- ❒ Belarus
- ❒ Belgium
- ❒ Belize
- ❒ Benin
- ❒ Bhutan
- ❒ Bolivia
- ❒ Bosnia Herzegovina
- ❒ Botswana
- ❒ Brazil
- ❒ Brunei
- ❒ Bulgaria
- ❒ Burkina
- ❒ Burundi
- ❒ Cambodia
- ❒ Cameroon
- ❒ Cape Verde
- ❒ Central African Rep
- ❒ Chad
- ❒ Chile
- ❒ China
- ❒ Colombia
- ❒ Comoros
- ❒ Congo
- ❒ Congo {Democratic Rep}
- ❒ Costa Rica
- ❒ Croatia
- ❒ Cuba
- ❒ Cyprus
- ❒ Czech Republic
- ❒ Denmark
- ❒ Djibouti
- ❒ Dominica
- ❒ Dominican Republic
- ❒ East Timor
- ❒ Ecuador
- ❒ Egypt
- ❒ Salvador
- ❒ Equatorial Guinea
- ❒ Eritrea
- ❒ Estonia
- ❒ Ethiopia
- ❒ Fiji
- ❒ Finland
- ❒ France
- ❒ Gabon
- ❒ Gambia
- ❒ Georgia
- ❒ Germany
- ❒ Ghana
- ❒ Greece
- ❒ Grenada
- ❒ Guatemala
- ❒ Guinea
- ❒ Guinea-Bissau
- ❒ Guyana
- ❒ Haiti
- ❒ Honduras
- ❒ Hungary
- ❒ Iceland
- ❒ India
- ❒ Indonesia
- ❒ Iran
- ❒ Iraq
- ❒ Ireland {Republic}
- ❒ Israel
- ❒ Italy
- ❒ Ivory Coast
- ❒ Jamaica
- ❒ Japan
- ❒ Jordan
- ❒ Kazakhstan
- ❒ Kenya
- ❒ Kiribati
- ❒ Korea North
- ❒ Korea South
- ❒ Kosovo
- ❒ Kuwait
- ❒ Kyrgyzstan
- ❒ Laos
- ❒ Latvia
- ❒ Lebanon
- ❒ Lesotho
- ❒ Liberia
- ❒ Libya
- ❒ Liechtenstein
- ❒ Lithuania
- ❒ Luxembourg
- ❒ Macedonia
- ❒ Madagascar
- ❒ Malawi
- ❒ Malaysia
- ❒ Maldives
- ❒ Mali

- ❒ Malta
- ❒ Marshall Islands
- ❒ Mauritania
- ❒ Mauritius
- ❒ Mexico
- ❒ Micronesia
- ❒ Moldova
- ❒ Monaco
- ❒ Mongolia
- ❒ Montenegro
- ❒ Morocco
- ❒ Mozambique
- ❒ Myanmar, {Burma}
- ❒ Namibia
- ❒ Nauru
- ❒ Nepal
- ❒ Netherlands
- ❒ New Zealand
- ❒ Nicaragua
- ❒ Niger
- ❒ Nigeria
- ❒ Norway
- ❒ Oman
- ❒ Pakistan
- ❒ Palau
- ❒ Panama
- ❒ Papua New Guinea
- ❒ Paraguay
- ❒ Peru
- ❒ Philippines
- ❒ Poland
- ❒ Portugal
- ❒ Qatar
- ❒ Romania
- ❒ Russian Federation
- ❒ Rwanda
- ❒ St Kitts & Nevis
- ❒ St Lucia
- ❒ Saint Vincent & the Grenadines
- ❒ Samoa
- ❒ San Marino
- ❒ Sao Tome & Principe
- ❒ Saudi Arabia
- ❒ Senegal
- ❒ Serbia
- ❒ Seychelles
- ❒ Sierra Leone
- ❒ Singapore
- ❒ Slovakia
- ❒ Slovenia
- ❒ Solomon Islands
- ❒ Somalia
- ❒ South Africa
- ❒ Spain
- ❒ Sri Lanka
- ❒ Sudan
- ❒ Suriname
- ❒ Swaziland
- ❒ Sweden
- ❒ Switzerland
- ❒ Syria
- ❒ Taiwan
- ❒ Tajikistan
- ❒ Tanzania
- ❒ Thailand
- ❒ Togo
- ❒ Tonga
- ❒ Trinidad & Tobago
- ❒ Tunisia
- ❒ Turkey
- ❒ Turkmenistan
- ❒ Tuvalu
- ❒ Uganda
- ❒ Ukraine
- ❒ United Arab Emirates
- ❒ United Kingdom
- ❒ Uruguay
- ❒ Uzbekistan
- ❒ Vanuatu
- ❒ Vatican City
- ❒ Venezuela
- ❒ Vietnam
- ❒ Yemen
- ❒ Zambia
- ❒ Zimbabwe
- ❒ Other _____ _____ _____

27. *How has your consulting business been affected by the trend to move engineering offshore?*

28. *How has your consulting business been affected by the downturn in the economy?*

29. *What action do you recommend that the IEEE Consultants' Network take in response to your answers to the two questions immediately preceding?*

30. *IEEE-USA has an online Consultants Database (see http://www.ieeeusa.org/consultants) to allow member consultants to advertise their services to prospective clients. What is your level of interest in the Database?*

- ❒ I am currently a member
- ❒ I am a former member
- ❒ I have been aware of the Database but choose not to join
- ❒ I have been aware of the Database and may have an interest in joining
- ❒ I have not been aware of the Database and do not have an interest in joining
- ❒ I have not been aware of the Database and may have an interest in joining

31. *IEEE-USA currently has more than 30 local consultants' networks throughout the United States. IEEE-USA is considering establishing group discount rate for local networks to list their full membership in IEEE-USA's Consultants Database. If already part of a local network, would you agree to join the database at a group discounted rate?*

❒ I would be more likely to join ❒ I would be less likely to join ❒ Neither / unsure

32. *If you would like a coupon for a free 2011 Survey Report emailed to you, please provide your email address here. (The Survey Report will be published as an IEEE-USA E-Book and offered for sale to non-respondents.)*

33. *Using the definitions of levels of professional engineering responsibility provided, please choose the one level that best describes your responsibility as of the date that you were last previously employed. These definitions are based on U.S. Department of Labor criteria and have been used for many years by IEEE-USA to support more precise information on the compensation of engineers. Note that a tenth and final level applies if you are working but are not employed as an engineer. If you are currently unemployed, a full-time student, or completely retired and no longer working, use the level that applied to your most recent job.*

- ❒ Engineer Level 1 (equivalent to GS-5)
- ❒ Engineer Level 2 (equivalent to GS-7)
- ❒ Engineer Level 3 (equivalent to GS-9 or Academic Instructor)
- ❒ Engineer Level 4 (equivalent to GS-11 or Assistant Professor)
- ❒ Engineer Level 5 (equivalent to GS-12 or Associate Professor)
- ❒ Engineer Level 6 (equivalent to GS-13 or Full Professor)

- ❒ Engineer Level 7 (equivalent to GS-14 or Distinguished Professor or Academic Department Head)
- ❒ Engineer Level 8 (equivalent to GS-15 or Academic Department Head or Dean)
- ❒ Engineer Level 9 (greater than GS-15 or Academic Dean or higher)
- ❒ Other/Not Employed as Engineer
- ❒ Unknown

34. *Listed below are ten broad areas of technical competence. Please select the one response that best describes your primary area of technical competence: Circuits and Devices (includes Circuits and Systems; Components, Packaging and Manufacturing Technology; Electronic Devices; Lasers and Electro-Optics; Solid-State Circuits) Communications Technology (includes Broadcast Technology; Communications; Consumer Electronics; Vehicular Technology) Computers (includes Hardware; Non-Internet Software Development; Non-Internet Systems Analysis/Integration; Non-Internet Software Applications Including Database Admin.; Internet/Web Development/Applications; Other or combinations of the above) Electromagnetics and Radiation (includes Antennas and Propagation; Electromagnetic Compatibility; Magnetics; Microwave Theory and Techniques; Nuclear and Plasma Sciences) Energy and Power Engineering (includes Power Engineering) Engineering and Human Environment (includes Education; Engineering Management; Professional Communication; Reliability; Social Implications of Technology) Industrial Applications (includes Dielectrics and Electrical Insulation; Industry Applications; Instrumentation and Measurement; Power Electronics) Signals and Applications (includes Aerospace and Electronic Systems; Geoscience and Remote Sensing; Oceanic Engineering; Signal Processing; Ultrasonics, Ferroelectrics and Frequency Control) Systems and Control (includes Control Systems; Engineering in Medicine and Biology; Industrial Electronics; Information Theory; Robotics and Automation; Systems, Man and Cybernetics).*

- ❒ Circuits and Devices
- ❒ Communications Technology
- ❒ Computers
- ❒ Electromagnetics and Radiation
- ❒ Energy and Power Engineering
- ❒ Engineering and Human Environment
- ❒ Industrial Applications
- ❒ Signals and Applications
- ❒ Systems and Control
- ❒ Other (please specify)_____

34 *a) Within the area of Circuits and Devices, please check the one response that best describes your primary area of technical competence.*

- ❒ Circuits and Systems
- ❒ Components, Packaging and Manufacturing Technology
- ❒ Electronic Devices
- ❒ Lasers and Electro-Optics
- ❒ Solid-State Circuits
- ❒ Other Circuits and Devices specialties, or combinations of the above, please specify_____

34 b) Within the area of Communications Technology, please check the one response that best describes your primary area of technical competence.

- ❒ Broadcast Technology
- ❒ Communications
- ❒ Consumer Electronics
- ❒ Vehicular Technology
- ❒ Other Communications Technology specialties, or combinations of the above, please specify_____

34 c) Within the area of Computers, please check the one response that best describes your primary area of technical competence.

- ❒ Hardware
- ❒ Non-Internet Software Development
- ❒ Non-Internet Systems Analysis/Integration
- ❒ Non-Internet Software Applications Including Database Admin.
- ❒ Internet/Web Development/Applications
- ❒ Other Computer specialties, or combinations of the above, please specify_____

34 d) Within the area of Eectromagnetics and Radiation, please check the one response that best describes your primary area of technical competence.

- ❒ Antennas and Propagation
- ❒ Electromagnetic Compatibility
- ❒ Magnetics
- ❒ Microwave Theory and Techniques
- ❒ Nuclear and Plasma Sciences
- ❒ Other Electromagnetics and Radiation specialties, or combinations of the above, please specify_____

34 e) Within the area of Engineering and Human Environment, please check the one response that best describes your primary area of technical competence.

- ❒ Education
- ❒ Engineering Management
- ❒ Professional Communication
- ❒ Reliability
- ❒ Social Implications of Technology
- ❒ Other Engineering and Human Environment specialties, or combinations of the above, please specify_____

34 f) Within the area of Industrial Applications, please check the one response that best describes your primary area of technical competence.

- ❒ Dielectrics and Electrical Insulation
- ❒ Industry Applications
- ❒ Instrumentation and Measurement
- ❒ Power Electronics
- ❒ Other Industrial Applications specialties, or combinations of the above, please specify_____

34 g) Within the area of Signals and Applications, please check the one response that best describes your primary area of technical competence.

- ❒ Aerospace and Electronic Systems
- ❒ Geoscience and Remote Sensing
- ❒ Oceanic Engineering
- ❒ Signal Processing
- ❒ Ultrasonics, Ferroelectrics and Frequency Control
- ❒ Other Signals and Applications specialties, or combinations of the above, please specify_____

34 h) Within the area of Systems and Control, please check the one response that best describes your primary area of technical competence.

- ❒ Control Systems
- ❒ Engineering in Medicine and Biology
- ❒ Industrial Electronics
- ❒ Information Theory
- ❒ Robotics and Automation
- ❒ Systems, Man and Cybernetics
- ❒ Other Systems and Control specialties, or combinations of the above, please specify_____

35. As of January 1, 2011, were you employed (or self-employed) in your primary area of technical competence, as indicated in the previous question?

❒ Yes ❒ No

36. During calendar year 2010, were you employed at any time on a contract (job-shop engineering) basis?

❒ Yes ❒ No

37. How many different clients have you worked for during the calendar year of 2010?

_____

_____

38. If offered, would you join a fee-based national consultants network started by IEEE-USA. The additional fee would include membership into the IEEE-USA's Consultants Database, annual choice of one IEEE-USA E-Book, and free entry into an all day consultants training session held annually at IEEE-USA's Annual Meeting (DVD recording of the training session will be provided to those unable to attend in person). If offered would you be:

❒ I would be likely to join ❒ I would be unlikely to join ❒ Unsure

STOP! Complete – Thank you very much for your input.

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