

**Note from the secretariat.**

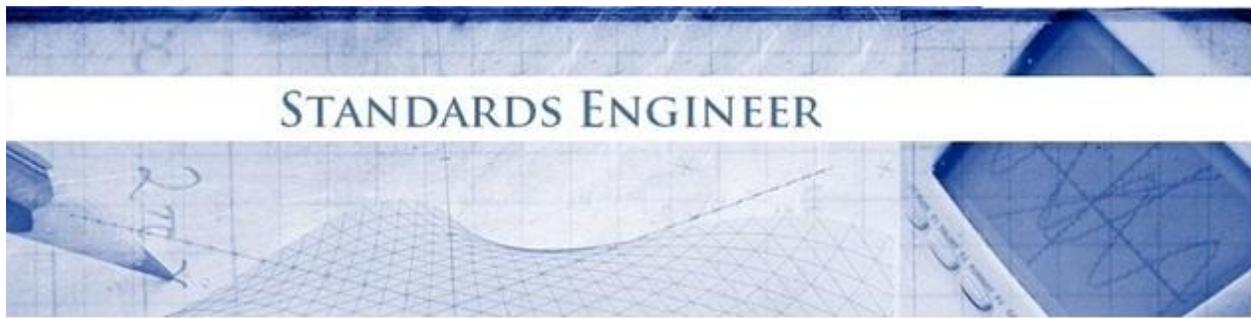
**This information paper contains an analysis of how standards-related requirements are reflected in job descriptions.**

**It was prepared by the University of Bremen and DFKI–German Research Centre for Artificial Intelligence**

**and it shows that companies are not very clear in formulating their requests for standards-related competencies which might**

**create a confusion about the extent the knowledge of standards is really required by the market.**

**This paper is presented for information of the participants in the workshop in the form and language it was received by the secretariat.**



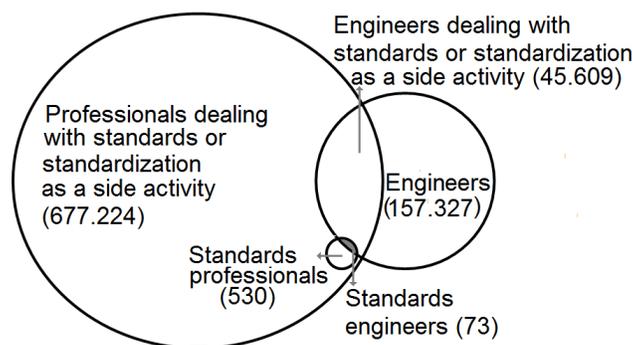
## Standards Engineers<sup>1</sup>

**S**tandards professional's work is shifting from technical documentation tasks to a more engineering-like activity. In the market jargon, these professionals are acknowledged as "Standards Engineers". An exploratory research of the empirical data collected from a survey (April 2010 to today) on companies recruiting professionals with the words "Standards" and "Engineers" in the title.

**Standards Engineers Market Analysis:** +1000 job offers : +400 jobs analysed + 22 phone calls

**Standards Engineer characterization:** Notably, there was no common portrayal of the role for the "Standards Engineer" position. The responsibilities and knowledge for this professional varied enormously according to the company's profile: from actively participating in standards development to exclusively accomplishing audits to ensure standards compliance; from pure technical activities to a managerial performance. However, all companies searched for a specific engineer or equivalent Bachelor (industrial, electrical, chemical, informatics, etc.) with additional experience in standards (sometimes experience in a particular standard) and respective standardization issues. The standards engineer career was not focused on generalists.

**Standards Engineer market segment:** From the results of statistics (Figure 1), one could infer that circa 1/3 of open job positions for engineers consider, somehow, standard(s) or standardization activities in the description. However, only 0,1% of the engineers to be recruited are standards engineers. In the other hand, 29% of the all the job offers for standards professionals were engineers.



**Figure 1.** Intersections among job offers containing "Engineers" or "Standard(s)" in the title, and "Standards" or "Standardization" in the description

- **Examples of job titles:** Avionics Standards Engineer, Civil Standards Engineer, Distribution Standards Engineer, Industrial Standards Engineer, Mechanical and Electrical Standards

<sup>1</sup> From the paper "Standards Engineer: Who needs them?" Workshop on 'Standardisation Management' I-ESA'12 conference (Interoperability for Enterprise Systems and Applications). 20-21 March 2012 Valencia/Spain

*Engineer, Process and Standards Engineer, Quality and Standards Engineer, Structural Standards Engineer, Wireless Standards Engineer, etc*

- **Requirements:** Engineering degree, from at least 3 to 13 years experience in engineering+standardisation, persuasive oral and written advocacy skills (examples: ability to build and work with coalitions)
- **Positions with „engineer“ in the title**
  - 30% considers standard(s) or standardization activities in the job description
  - 0,1% Standards Engineers
- **Positions with „standard“ in the title**
  - 39% managers (Manager, Director, Principal, Head, Leader, Chief, Vice-President,..)
  - 29% engineers
  - 16% analysts (Analysist, Specialist, Consultant, Expert,..)
  - 12% developers (Developer, Producer, Programmer, Writer, Researcher, ...)
  - 6% compliance
  - 2% trainers

Table 1 presents the amount of terms found for the string “Standards Engineer” in different languages. These data suggest a very active participation of China on standard and standardization matters.

Language	“Standards Engineer”	Terms found
Afrikaans	Standaard Ingenieur	44
Arabic	معايير المهندس	6
Dutch	Standaardisatie Ingenieur	1
English	Standards Engineer	546.000
French	Ingenieur de Normalisation	1.210
German	Normeningenieur	5.140
Hindi	मानक अभियंता	0
Indonesian	standard Insinyur	5
Italian	Ingegnere de normalizzazione	0
Japanese	標準のエンジニア	315.000
Korean	표준 엔지니어	743
Mandarin	标准化工程师	2.040.000
Polish	Inżynier standardy	3
Portuguese	Engenheiro de Normas	4.230
Russian	Стандарты инженер	136
Spanish	Ingeniero de Normas	18.200
Turkish	Standartlar Mühendisi	4

**Table 1.** Hits found for the string “Standards Engineers” in different languages

**Job offers by country’s economy:** Clearly, the European Union is lagging behind in the market for standards engineers with only 8 % of all job offers. The G8 group provides 89%, and the G20 delivers 99% of all job offers.

**Job offers by Company Size:** The official classification from the European Commission [Commission Recommendation, 2003]<sup>2</sup> was employed. The company name was not show in 16% of the job offers. From the remaining data, 95% of the job offers were posted by large companies, 5% by medium-size companies and 0,1% by small enterprises.

Company	Percentage
Not exposed in the job offer	16%
Large Companies (more than 250 workers)	95%
Small/Medium Enterprises (SME Companies)	5%

**Table 2. Companies size**

**Job offers by industry sector:** For a better comparison with available market statistics, table 2 employs one of these popular sector classifications. In order to provide a more detailed overview, the manufacturing sector was sub-divided into 3 sub-sectors. Considering our detailed classification, Standards Engineers open positions are definitely concentrated in the industry, while the remaining standard professionals are mainly being recruited in the healthcare and hospitality sector.

Sector	Standards Engineer	All standards professionals	General offers in the market <sup>3</sup>
Accounting	0%	0%	5%
Construction	2%	0%	<1%
Education	0%	7%	6%
Financial services and banking	0%	9%	8%
Healthcare + Hospitality	7%	25%	40%
Human resources	6%	8%	2%
Information Technology	25%	15%	12%
Manufacturing:	<b>55%</b>	<b>34%</b>	5%
<i>Industry</i>	<b>37%</b>	<b>12%</b>	
<i>Energy</i>	<b>13%</b>	<b>8%</b>	
<i>Services</i>	<b>5%</b>	<b>14%</b>	
Media	0%	2%	2%
Real State	0%	0%	1%
Retail	0%	1%	13%
Transportation	5%	1%	7%

**Table 3. Companies sectors**

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<sup>2</sup> Large companies have more than 250 employees. Medium-size companies have less than 250 and more than 50 members. Small companies have between 10 and 49 persons. Micro companies have less than 10 persons.

<sup>3</sup> Data extracted from <http://www.indeed.com/> (Dez, 2011)