

This is a database tracking standard development, innovation and corporate involvement by 233 firms in 515 important technology standards over 19 years on a firm-standard-year level (2,059 company-standard pairs; 39,121 observations). The database provides information on the [volume of standard-related patent files per year](#) (also available weighted by forward citations), key events affecting the standard, and general measures of firm size and activity. Furthermore, the information on standards is matched to longitudinal data on informal standards consortia and patent pools. The database for instance includes information on whether a pool and / or consortium is active for the particular standard, how many firms are member, and whether a particular firm is member in a particular year.

Variable	Description
<u>General</u>	
<i>idn</i>	Serial number (by company-standard pair)
<i>standardid</i>	Name of the standard (on the project level)
<i>company</i>	Name of the company
<i>company_nr</i>	Serial number (by company)
<i>year</i>	Calendar year
<i>SSO</i>	Identity of the SSO (main SSO if more than one)
<i>declaring_firms</i>	Number of declaring firms for this standard (as to the declaration database retrieved in March 2010)
<i>numberfirms</i>	Number of firms in the sample for this standard
<u>Information on standard-related patent pools</u>	
<i>year_firstpoollaunch</i>	Year of the first pool launch for this standard
<i>first_poollaunch</i>	Dummy indicating the first pool launch
<i>competing_poollaunch</i>	Count of competing pool launches on the same standard
<i>complementary_poollaunch</i>	Count of complementary pool launches on the same standard (a new pool on a different part of the standard, complementary to the first pool)
<i>call_open</i>	Count of open calls (excluding competing launches)
<i>active_pools</i>	Number of active pools (= pools issuing licenses)
<i>active_poolsmainstandard</i>	Number of active pools on the main standard (excluding complementary pools)
<i>sumlicensorsmain</i>	Number of licensors in the active pools on the main standard
<i>licenseesmaxmain</i>	Number of licensees in the largest active pool on the main standard
<i>membermain</i>	Dummy indicating membership in one pool active on the main standard
<u>Information on standard-related consortia</u>	
<i>consortium_exists</i>	Dummy indicating consortium existence (time-invariant) for this standard
<i>consortium_name</i>	Name of the standard-related consortium
<i>consortia_active</i>	Dummy indicating activity (time-variant) of a consortium for this standard

<i>consortium_member</i>	Dummy (time-variant) indicating consortium membership of this firm this year
<i>outsider</i>	Indicates that the firm is not member, even though a consortium is active
<i>consortium_size</i>	Number of consortium members (as to consortium member list)
<i>number_consmembers</i>	Number of consortium members among the firms in the sample
<i>relative_conssize</i>	$number_consmembers / numberfirms$
<i>year_cons_active</i>	First year of consortium activity
<i>highfee</i>	Consortium membership fee (highest tier)
<i>lowfee</i>	Consortium membership fee (lowest tier)
<i>fee</i>	Consortium membership fee (average over all tiers)
<u>Information on standard-specific innovation</u>	
<i>patent_files</i>	yearly number of standard-related patent files by this firm
<i>pre_sample_means</i>	mean of <i>patent_files</i> over the period from 1982 to 1992
<i>citations</i>	as above, weighted by number of forward citations received within 4 years
<i>pre_sample_patweighted</i>	mean of <i>citations</i> over the period from 1982 to 1992
<u>Standard-specific variables</u>	
<i>standardage</i>	Age of the standard in years (zero in the year of first release, negative before)
<i>versionage</i>	number of years elapsed since last version release (dot before first release)
<i>number_pages</i>	number of pages of the standard document (zero before first release)
<i>release</i>	number of standard version releases this year
<i>release_cumul</i>	cumulative number of version releases since and including first release
<i>amendment</i>	number of amendments to the standard this year
<i>amendment_cumul</i>	cumulative number of standard amendments since first release
<i>standard_event</i>	$release + amendment$
<i>prioraccreditations</i>	Number of releases of equivalent standards before release at this SSO
<i>backwardreferences</i>	Number of references to previous standards in the standard document
<i>changeofcited</i>	Number of referenced standards withdrawn or revised per year
<i>twodigitics</i>	ICS classification of the standard (2 digit level)
<i>icswidth</i>	Number of ICS classifications of the standard (5 digit level)
<i>withdraw</i>	Version withdraw (can be a standard withdraw or revision)
<i>standard_withdraw</i>	Withdraw of the last version of a standard (version without direct successor)
<i>withdraw_year</i>	Year of standard withdraw
<i>forwardreferences</i>	Number of references to this standard by ulterior standards per year
<i>references_cumul</i>	Number of forward references cumulative (per standard version)
<i>forwardref_cum_standard</i>	Number of forward references cumulative (per standard)
<i>ulterioraccreditations</i>	Number of releases of equivalent standards at other SSOs per year
<i>accreditations_cumul</i>	Cumulative number of releases of equivalent standards at other SSOs
<i>standard_adoption</i>	Number of mentions of the standard in news feeds per year
<i>st_adoption_norm</i>	Normalized number of mentions of the standard in news feeds per year
<i>HHI_patentfiles_all</i>	HHI over patent ownership in the technological field of the standard
<i>HHI_patentfiles_insiders</i>	HHI over patent ownership in the technological field of the standard by companies declaring essential patents for the standard
<i>hhi_essential_patents</i>	HHI over the number of declared essential patents by company
<i>representativeness</i>	Measure of the similarity between the distribution of ownership of patents in

	the field and the distribution of ownership of declared essential patents
<i>insiders_standardfocus</i>	Share of the standard-related patents in the patent portfolio of companies declaring essential patents
<i>insidershare_at_patent_portfolio</i>	Share of patents owned by the companies declaring standard-essential patents in the technological field of the standard
<i>st1-st41</i>	Dummies for standard age (st1 = 18 years before first release, st41 = 22 years after first release)
<u>Company-specific variables</u>	
<i>employees</i>	Number of employees
<i>lag_empl</i>	One-year lag of <i>employees</i>
<i>sales</i>	Volume of sales per year
<i>lag_sales</i>	One-year lag of <i>sales</i>
<i>rdexpense</i>	R&D expenditure per year
<i>lag_rnd</i>	One-year lag of <i>rdexpense</i>
<i>tobins_q</i>	Tobin's Q
<i>lag_tobinsq</i>	One-year lag of <i>tobins_q</i>
<i>siccode</i>	Standard Industry Classification (4 digits)
<i>tech_distance</i>	Euclidean distance of the patent portfolio of this firm to the patent portfolio of all firms declaring standard-essential patents on this standard
<i>techoutsider</i>	Dummy indicating the observations with the highest <i>tech_distance</i>
<u>Time-specific variables</u>	
<i>ipc_g</i>	Number of patent applications in the IPC category G per year
<i>ipc_h</i>	Number of patent applications in the IPC category H per year
<i>ipc_control</i>	<i>ipc_g</i> for standards with ICS 33, <i>ipc_h</i> for standards with ICS 35
<i>dec_all</i>	number of declarations of standard-essential patents per year (for all standards in the sample)