The Cooperative Patent Classification by Application (TLS224_APPLN_CPC)

Welcome to the Cooperative Patent Classification by Application Table in PATSTAT, identified with the name TLS224_APPLN_CPC. The table contains for each application its assigned cooperative patent classifications (CPC symbols). All applications of the same DOCDB family have the same CPC symbols assigned.

In [1]:
```
from epo.tipdata.patstat import PatstatClient

# Initialize the PATSTAT client
patstat = PatstatClient(env='PROD')

# Access ORM
db = patstat.orm()

# Importing the as models
from epo.tipdata.patstat.database.models import TLS224_APPLN_CPC
```

APPLN_ID

Also in this case we have a link to table TLS201 via the `appln_id` attribute.

In [2]:
```
# Import table TLS201
from epo.tipdata.patstat.database.models import TLS201_APPLN

show_join = db.query(
    TLS201_APPLN.appln_id,
    TLS201_APPLN.appln_auth,
    TLS224_APPLN_CPC.cpc_class_symbol
).join(
    TLS201_APPLN, TLS224_APPLN_CPC.appln_id == TLS201_APPLN.appln
_id
).limit(1000)

show_join_df = patstat.df(show_join)
show_join_df
```

Out[2]:

	appln_id	appln_auth	cpc_class_symbol
0	47313799	WO	C07C2603/66
1	54115029	US	H04N 19/103
2	315443818	ES	C07D 273/00
3	468423603	DE	G02B 5/003
4	479329775	WO	F41G 11/003
...	...	...	...
995	499431103	CN	B01D 15/08
996	39090861	JP	A63F2300/6081
997	48304004	US	C03C2218/112
998	415656251	WO	G10L 21/0208
999	24931100	IT	Y02E 10/74

1000 rows × 3 columns

CPC_CLASS_SYMBOL

Classification symbol according to the Cooperative Patent Classification. It consists of up to 19 characters (A-Z, 0-9, /, space).

In [3]:
```
from sqlalchemy import func

symb_appln = db.query(
    TLS224_APPLN_CPC.appln_id,
    func.count(TLS224_APPLN_CPC.cpc_class_symbol).label('Number of symbols')
).group_by(
    TLS224_APPLN_CPC.appln_id
).having(
    func.count(TLS224_APPLN_CPC.cpc_class_symbol) > 1  # Consider only applications with more than 1 class symbol
).order_by(
    func.count(TLS224_APPLN_CPC.cpc_class_symbol).desc()
).limit(1000)

symb_appln_df = patstat.df(symb_appln)
symb_appln_df
```

Out[3]:

	appln_id	Number of symbols
0	323782095	333
1	54359235	333
2	3516741	333
3	8025569	333
4	56726084	333
...	...	...
995	16829015	144
996	45966997	144
997	54273206	144
998	586275885	144
999	2454180	144

1000 rows × 2 columns

In [4]:
```
appln_symb = db.query(
    TLS224_APPLN_CPC.cpc_class_symbol,
    func.count(TLS224_APPLN_CPC.appln_id).label('Number of symbol
s')
).group_by(
    TLS224_APPLN_CPC.cpc_class_symbol
).having(
    func.count(TLS224_APPLN_CPC.appln_id) > 1  # Consider only ap
plications with more than 1 class symbol
).order_by(
    func.count(TLS224_APPLN_CPC.appln_id).desc()
)

appln_symb_df = patstat.df(appln_symb)
appln_symb_df
```

Out[4]:

	cpc_class_symbol	Number of symbols
0	Y02E 60/10	1041175
1	A61P 35/00	1018994
2	A61P 43/00	1001281
3	A61P 29/00	627138
4	A61P 25/00	537022
...	...	...
251846	C12Y 103/98	2
251847	Y10S 165/173	2
251848	G05B2219/35265	2
251849	C12M 1/128	2
251850	G05B2219/32093	2

251851 rows × 2 columns

In [ ]: