



# AUSTRALASIAN CONFERENCE OF TERTIARY ADMISSIONS CENTRES

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Centres

## **Determining ATAR equivalents for International Baccalaureate students**

This document has been prepared by the Australasian Conference of Tertiary Admissions Centres (ACTAC) to explain the procedures used by tertiary admissions centres in Australia to determine tertiary entrance rankings for students who have completed the *Diploma of the International Baccalaureate* (hereafter referred to as the 'IB Diploma').

### **Background**

Before 2004, separate methodologies were used across Australia for assigning tertiary entrance ranks to the completed IB Diploma scores.

In 2004, in the interest of national consistency, ACTAC agreed to develop a national schedule for the IB Diploma and established a working party of state technical experts to undertake this work.

The working party recommended that the best way was to establish national conversion as a weighted average of the three methods used in New South Wales, Victoria and South Australia (these states having the largest cohorts of local IB students at that time). As noted below, each of these states had different data available to them when deriving their local conversion tables.

In July 2005 ACTAC advised the International Baccalaureate Organisation (IBO) and IB schools that a combined rank table would be used to convert IB Diploma results in 2007 for 2008 admissions and circulated a combined table showing how the conversion would apply to 2004 data.

The combined rank table is determined annually (in February), and is based on:

- the IB population weightings of the year prior to the current year as provided by the IB Development Manager – Australasia, with NT and SA treated as a single entity
- the latest rank table from each of NSW, SA, Victoria, and from 2016 onwards, Queensland, with the contribution for each state weighted according to the size of its IB candidature.

The Victorian and New South Wales rank tables are reviewed annually according to the appropriate state methodology. The South Australian rank table contributing to the combined rank is reviewed every five years.

In recent years there has been significant growth in the number of IB students in Queensland. By 2016, there were sufficient numbers of Queensland IB Diploma students who had progressed to tertiary study to enable comparative analysis. As a result, from 2016, Queensland data is included and contributes to the combined rank calculation.

The combined rank table is used to convert IB Diploma scores to tertiary entrance ranks for all jurisdictions in Australia.

## **Methodology used in each state**

### ***New South Wales***

Until 2013 the NSW methodology converted Year 12 ranks to age cohort ranks using an observed score equating technique with the School Certificate Examination (SCE), which all NSW HSC and IB students completed in Year 10, used as the anchor variable. The purpose of the equating exercise was to determine the ranks of ATAR-eligible students with respect to their age cohort, which in NSW, is closely approximated by their Year 7 cohort.

From 2014, in the absence of School Certificate data, the conversion from Year 12 ranks to age cohort ranks utilised an equipercentile observed score equating method, using first year university achievement (GPA) as an anchor variable.

The underlying premise of the previous method was that students with similar SCE achievement would be expected to demonstrate a similar level of achievement two years later at the end of Year 12. The premise underpinning the new method is that students with similar levels of achievement in a university course would be expected to have achieved at a similar level in their Year 12 examinations. A 2011 cohort study demonstrated that the schedule determined by this method was very close to the schedule determined by the previous method.

The new method was phased in gradually from 2014 onwards, with the NSW contribution to the combined schedule being the average of the schedule based on the SCE and that based on GPA. Thus, the new method constituted 50% of the NSW schedule in 2014. In 2015, the new method constituted 75% (with the previous method based on SCE constituting 25%). Following this projection, the NSW contribution to the combined schedule will entirely be based on the new method in 2016. The NSW contribution to the combined schedule will be updated annually.

### ***South Australia***

The approach used in South Australia is based on the following premise:

A fair and equitable conversion table will convert an IB result to an ATAR equivalent where the IB student (on average) will perform at the same level in higher education as a SACE student (on average) with a corresponding ATAR.

To create an equivalence table, a research database is maintained by SATAC. Every IB school leaver who has gained entry to a SA university via SATAC's university undergraduate admissions service in the last 10 years is added to the database.

In addition, as a control group, Year 12 SACE school leavers are included where:

- they had gained entry to the same courses as the IB students in the database; and
- they are within a 10 rank ATAR band surrounding the converted rank (using whatever has been the current conversion of the IB students in the course, providing a wide enough range of students in the control group to allow for data modelling).

The database typically includes in the order of 130 IB Diploma candidates and 1000 SACE candidates from each year. Contemporary research databases contain 10 years of students.

Higher education results are added to this database and converted to Grade Point Averages (GPA) using the methodology required by SATAC's participating universities.

Correlations between ATAR, IB Diploma score and GPA are tested to confirm that:

- there is an appreciable relationship between ATAR and first year higher education performance
- performance at the higher education level is a valid point of comparison of achievements for SACE and IB students and the basis for the ATAR/IB conversion
- the relationship between ATAR and GPA and mapped ATAR for IB Diploma students and GPA using the current SATAC equivalence table is very similar, indicating a level of confidence in the existing conversion.

The basic methodology used to model the conversion table involves an iterative process to produce a “best fit” table of equivalences.

The resulting equivalence table is forwarded to the universities for approval through the SATAC University Procedures Committee.

### ***Victoria***

The Victorian methodology uses the General Achievement Test (GAT) which is undertaken by all VCE completing students and Victorian IB Diploma students in June each year.

Analysis shows that there is a linear relationship between the scaled VCE aggregate and the GAT result and also a linear relationship between the GAT result and IB Diploma score.

Equipercntile matching is used with VCE data to produce a lookup table to convert from GAT aggregate to VCE aggregate. Similarly, equipercntile matching and loess smoothing is used with IB data to produce a lookup table to convert from IB Diploma score to maximum GAT aggregate for that IB Diploma score.

For all IB Diploma scores from 24 to 45, the second table is used to produce a corresponding value of GAT, and then the first table is used to produce a corresponding value of VCE aggregate.

Scaled aggregates are then converted to Notional ATARs using the scaled aggregate to ATAR table for that year.

To ensure robustness of the process, both VCE and IB data are amalgamated over three years.

### ***Queensland***

The process used to create the Queensland rank table is similar to the South Australian methodology. Tertiary results, specifically GPAs, were used to award each IB score an equivalent ATAR. To complete this process, IB and tertiary results of IB Diploma students who completed at least two semesters of tertiary study (at a Queensland institution over the past few years) was used. Data was also collected on the school and tertiary results of students who used their Overall Position (OP) to gain entrance to a course (the OP is the current Queensland tertiary entrance rank).

This data was used to find the relationship between tertiary GPA and IB score, as well as the relationship between tertiary GPA and OP. When constructing these relationships, care was taken not to use data for IB scores or OPs that were only awarded to a small number of students. Equivalent OPs for each IB score were allocated using these relationships, by using tertiary GPA as the linking measure. The equivalent OPs were then converted to equivalent ATARs. Some final adjustments were made, as necessary, to ensure that the top IB score (45 points) corresponded to

the highest ATAR (99.95). This reflects statistical phenomena which limit the highest possible average for students.

As there were few Queensland students at the bottom end of the IB Diploma score scale who undertook tertiary study, IB Certificate students with sufficient results were predicted an IB Diploma score and added to the data set to increase the amount of information available for this section of the scale. Scarcity of data also meant that students who completed their IB Diploma in a jurisdiction other than Queensland were also used in the calculations described above.

### **IB subject scores and state and territory Year 12 subject scores**

In 2009 ACTAC established an expert group to consider methodologies for mapping Year 12 subject scores/grades across each jurisdiction, including the IB.

The expert group developed grade mapping tables for subject prerequisites and subject bonus purposes. ACTAC agreed that the use of these tables would be determined by each tertiary admissions centre.

Further information on the mappings used by each state/territory is available from the relevant tertiary admissions centre.

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