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 admission centres in Australia to determine tertiary entrance rankings for International Baccalaureate students.

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 the 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 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 used for the current year IB results as provided by the IB Regional Representative – Australasia, with
  - ACT and NSW treated as a single entity
  - NT and SA treated as a single entity
- The latest rank table from each of NSW, SA and Victoria.

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.

ACTAC determines annually the combined rank table to convert IB Diploma scores to tertiary entrance ranks for use in New South Wales and Australian Capital Territory, Queensland, Tasmania, Victoria and Western Australia.

The combined table is not used in South Australia and the Northern Territory.

The combined rank table is determined from the three state conversion tables (NSW, South Australia and Victoria), with the contribution from each state weighted according to the size of their IB candidature.

In recent years there has been significant growth in the number of IB students in Queensland. When sufficient numbers of Queensland IB Diploma students have progressed to tertiary study, Queensland data will be included and contribute to the combined rank calculation.
Methodology Used in Each State

New South Wales

Year 12 students who are eligible for an ATAR in NSW are ranked on the basis of an aggregate of scaled HSC marks, which comprise their best two units in English and their best eight units from their remaining courses.

These Year 12 ranks are converted to age cohort ranks using a score equating technique with the School Certificate Examination used as the anchor variable as student achievement on this test is highly correlated with achievement in the HSC. The purpose of the equating exercise is to determine the ranking of these students with respect to their age cohort, which in NSW, is closely approximated by their Year 7 cohort.

Full details of the methodology are given in a UAC Technical Report (2009), The Australian Tertiary Admission Rank in New South Wales.

Most IB students in NSW have completed the NSW School Certificate Examination two years before completing their IB Diploma and research shows that their results in this examination are highly correlated with their IB scores.

The underlying principle of the methodology used to determine UAC ranks for IB Diploma students is that students who have similar levels of achievement in the School Certificate Examination will demonstrate similar levels of achievement at the end of Year 12, irrespective of whether they completed the Higher School Certificate or IB Diploma. Data show that an IB Diploma student scoring 24 has demonstrated similar achievement to the middle student in the HSC cohort.

The process for determining the UAC ranks equivalent to the IB Diploma scores is as follows:

1. School Certificate data are obtained for HSC and IB cohorts for the current year and for the two preceding years.
2. School Certificate Examination total marks are mapped against ATARs and IB Diploma scores, from which a mapping of IB Diploma scores to ATARs can be determined.
3. A quadratic regression is then used to obtain a smooth relationship between IB Diploma scores and predicted ATARs, which are the UAC ranks.
4. The final relationship is determined by modifying the relationship by equating an IB Diploma score of 45 to a UAC rank of 99.95 and ensuring that an IB Diploma score of 24 equates to a UAC rank similar to the median ATAR.

The calculation is performed annually.

As the NSW School Certificate Examination will not be offered after 2011, the NSW method of calibrating IB Diploma scores will change. Research is currently being undertaken to determine the most appropriate procedure to be adopted for the IB 2015 (for 2016 admissions) and beyond.

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 an 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:
• 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 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.

Equipercentile matching is used with VCE data to produce a lookup table to convert from GAT aggregate to VCE aggregate. Similarly, equipercentile 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 score.

For all IB 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.

**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 admission centre.

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