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NIPMO
NATIONAL INTELLECTUAL PROPERTY MANAGEMENT OFFICE
An initiative of the Department of Science and Technology

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GUIDELINE 5.2 OF 2021

GUIDANCE FOR DETERMINING THE FULL COST OF RESEARCH AND DEVELOPMENT AS PER THE INTELLECTUAL PROPERTY RIGHTS FROM PUBLICLY FINANCED RESEARCH AND DEVELOPMENT ACT

In this document, a methodology for determining the full cost of research and development (R&D) conducted at publicly financed institutions, as required by the Intellectual Property Rights from Publicly Financed Research and Development Act, 2008 (No 51 of 2008; IPR Act), is set out, and for the submission of such determinations to the National Intellectual Property Management Office (NIPMO) for approval and certification.

The Full Costing Sub-Committee of the NIPMO Advisory Board (FCC) undertook a review of Guideline 5.1 of 2019 based on inputs received from various institutions and the assessment of their submissions received during the 2020/21 submission period. The review was undertaken to simplify the calculations and provide additional guidance where certain concepts were being interpreted differently by institutions.

This document provides for a method best suitable for calculation of an Indirect Cost Recovery Rate (ICRR) at **Higher Education Institutions (Annexure B)** and well as **Schedule 1 Institutions (Annexure C)** (collectively known as institutions). Furthermore, this updated version will provide guidance on how to apply the NIPMO approved ICRR within an institution to determine the full cost of a R&D project.

We further direct readers to NIPMO Interpretation Note 13 which contains frequently asked full cost questions.

In the instance where NIPMO does not approve the submitted full cost calculations, the IPR Act provides for an institution, whose rights were adversely affected by an administrative decision made by NIPMO, to request a review or appeal of such decision. Please refer to NIPMO Practice Note 2 for the procedure.

Please do not hesitate to contact NIPMO (jetane.charsley@nipmo.org.za; 012 844 0228) should you have any questions with regards to any matter in this Guideline.

Kind regards

Ms Paballo Phiri
Acting Head: NIPMO
Date: 08 September 2021

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LIST OF ACRONYMS

DC	Direct costs
FCC	Full Costing Sub-Committee of the NIPMO Advisory Board
HEI	Higher education institutions as listed in Annexure A
HEMIS	Higher Education Management Information System
ICRRs	Indirect cost recovery rates
Institutions	HEI and Schedule 1 institutions, please refer to Annexure A for a full list of institutions.
IP	Intellectual Property (see IPR Act and Guideline 1.3 of 2019 for the definition)
IPR Act	Intellectual Property Rights from Publicly Financed Research and Development Act, 2008 (No 51 of 2008)
NIPMO	National Intellectual Property Management Office
NSFAS	National Student Financial Aid Scheme
R&D	Research and development (see Guideline 1.3 of 2019 for the definition)
Schedule 1 institutions	Institutions which appear in Schedule 1 of the IPR Act and listed in Annexure A
TS	Technology Station

1 INTRODUCTION

The methods for determining the full cost of research and development (R&D) conducted at publicly financed institutions as required by the Intellectual Property Rights from Publicly Financed Research and Development Act, 2008 (No 51 of 2008; IPR Act) are set out in this document. Furthermore, the process for the submission of such determinations to the National Intellectual Property Management Office (NIPMO) for approval and certification is provided.

The institutions to whom this applies are listed in **Annexure A** under two categories: Higher education institutions (HEIs) and Schedule 1 institutions as per the IPR Act. For both HEIs and Schedule 1 institutions, this Guideline endeavours to provide the preferred methodology (set out in **Annexures B and C** respectively) to calculate an indirect cost recovery rate (ICRR) that must be submitted to NIPMO and, separately, guidance on how to use/apply the approved ICRR in practice to calculate the full cost of an R&D project.

1.1 Legislative provisions

The rationale for developing an approach towards determining the full cost of R&D of publicly financed institutions is set out in section 15(4)(a) and (b) of the IPR Act which states as follows:

(a) "*Any research and development undertaken at an institution and funded by a private entity or organisation on a full cost basis shall not be deemed to be publicly financed research and development and the provisions of this Act shall not apply thereto.*
(b) *For the purposes of paragraph (a), "full cost" means the full cost of undertaking research and development as determined in accordance with international financial reporting standards, and includes all applicable direct and indirect cost as may be prescribed.*"

Section 15(5) provides a definition for the term "*private entity or organisation*" to include "*a private sector company, a public entity, an international research organisation, an educational institution or an international funding or donor organisation*".

Section 15(4) is elaborated upon in Regulation 16(1) of the IPR Act which determines that:

a) "***Each institution must every 2 years***, *submit to NIPMO for approval, formulae for calculation of its applicable direct costs and indirect costs of undertaking research and development and matrices substantially set out in Form IP9 or such other format as may be provided by NIPMO in guidelines, together with an explanation note in respect of how such factors have been arrived at.*
b) *The formulae referred to in paragraph (a) must include applicable direct costs of undertaking research and development determined in terms of the institution's financial and other policies and in accordance with generally accepted accounting practices.*
c) *Where it is not feasible to determine the indirect costs accurately, the formulae will include* ***a determination of a surcharge in the form of a percentage to be levied on the direct costs as a best estimate of the indirect cost of undertaking such research and development****.*
d) *The indirect cost percentage may vary between organisational units or faculties within an institution and the institution may justify any variations.*

e) *The Advisory Board must constitute a committee of independent experts to whom NIPMO shall refer for consideration the formulae and matrices submitted by the institutions.*
f) *NIPMO must within 60 days of receipt of the submission referred to in paragraph (a) approve or recommend amendments based on reasons provided by the committee referred to in paragraph (e), the formulae and matrices submitted by the institution.*
g) *On approval of an institution's formula and matrices, NIPMO or such other agency accredited by NIPMO in terms of guidelines to be issued by NIPMO, must issue such institution with a certificate confirming NIPMO's acceptance of the institution's costing model.*" **[own emphasis added]**

2 AIMS TOWARDS DETERMINING THE FULL COST OF R&D

The method set out in this document towards determining the full cost of R&D conducted at publicly financed institutions has the following aims:

a) Compliance with the requirements regarding the determination of full cost of R&D of publicly financed institutions as provided for in the IPR Act and its regulations.
b) Recognition of the specific institutional characteristics of publicly financed R&D institutions, where applicable: institutional and operational autonomy, and institutional public accountability.
c) While recognising the diversity of publicly financed R&D institutions in South Africa, nevertheless ensuring acceptable levels of consistency across the publicly financed R&D system.
d) Strengthening institutional capacity (including financial and contract management) and institutional leverage in successfully concluding R&D agreements/contracts with external funders (including private entities or organisations as defined in section 15(5) of the IPR Act and set out above) as a means of advancing R&D outputs.

The aims in b) and c) above seek to achieve a careful balance between ensuring broad consistency across the publicly financed R&D system in determining the full cost of R&D while at the same time endeavouring not to require institutions to adopt a prescriptive and intrusively uniform approach in their individual formulae and bases for calculating the full cost of R&D.

2.1 Guiding Principles

The following framework of guiding principles apply:

a) Institutions should endeavour to use the guiding principles, as set out in this document, not only for compliance purposes but also for their strategic and managerial benefit in improving levels of strategic focus and levels of institutional effectiveness and efficiency, particularly in relation to their costing of R&D. This implies that institutions should analyse the outcomes of their full costing of institutional R&D from a strategic point of view as well as from an operational effectiveness and efficiency perspective.

b) NIPMO's legal mandate and its responsibilities in terms of the IPR Act and the Regulations apply to the concept of full costing of R&D only and exclude all pricing

considerations, as well as so-called contingency or risk provisions. The pricing strategy and provisions for project risks or unforeseen events (contingencies) are regarded as outside of the legislative requirement of full costing of R&D at institutions and these remain at the discretion of the institutions. No information on these factors should be included in the calculations.

c) In terms of the IPR Act and the Regulations, the determination of the full cost of R&D must comply with generally accepted accounting practices. This implies that written confirmation must be provided that the most recent audited annual financial statements were used to perform the calculations (to include the year). Where amounts used in the calculation are derived from management accounts, these management accounts must be reconcilable to the audited financial statements.

d) The methods for determining the full cost of R&D should not be made unduly complex and overly detailed to thus contribute towards increasing the cost of R&D.

e) If needed, institutions can also present their calculations on the ICRR of R&D based on data and financial information pertaining to their different internal organisational structures such as academic faculties, technology stations (TS) or R&D units. It is, however, of the utmost importance that a consistent approach is followed throughout the entity and that variations in outcomes are only due to data reflecting valid and verifiable cost differences within the institution.

f) The ICRR should be an absolute rate and not be presented as "approximate", "at least", "maximum" or any other non-definite value such as covering an ICRR range.

g) The method applied for determining the full cost of R&D should enjoy a high level of internal institutional buy-in and, if needed, be defensible when interacting with potential external funding agencies.

3 METHOD AND MINIMUM REQUIREMENTS

The guidance to determining the ICRR of R&D is set out in **Annexure B** for HEIs and **Annexure C** for Schedule 1 institutions.

The HEI approach (**Annexure B**) is based on an initial proposal by Higher Education South Africa (HESA), now Universities South Africa (USAF), and as amended by the FCC, a subcommittee of NIPMO Advisory Board. The Schedule 1 approach (**Annexure C**) is based on a general convergence of approaches followed by Schedule 1 institutions in their full cost calculations submitted to NIPMO.

Apart from these considerations regarding the methods, submissions on the full cost of R&D by all publicly funded R&D institutions have to comply with the following **minimum requirements** in order to be considered by the FCC for recommendation to NIPMO:

a) **A methodology as provided** setting out a **formula or structured approach** for determining the full cost of R&D including the rationale and method for determining an ICRR

or ICRR(s). The methodology followed will be regarded as a Form IP9. Institutions are therefore no longer required to submit the IP9 Form as attached to the Regulations of the IPR Act as part of their submission to NIPMO. Institutions are required to provide motivating reasons and factors for deviating from any of the determined steps (as set out in Annexures B and C).

b) An extract of **source data** to be included. The source data (extracts from Annual Financial Statements (AFS), management accounts (MA)) will be used by the FCC for verification purposes only.

c) An **accompanying statement signed by the institution's CFO** attesting to the accuracy of the calculations and confirming that:
   - No pricing factors or contingency provisions have been included in the calculations of the full cost of R&D.
   - The definitions of concepts and terminology contained in the respective institutions' Annexures have been incorporated and have been applied to the methods and calculations used in determining the full cost of R&D.
   - That the amounts used in the calculations are derived from and/or are reconcilable to the most recent audited annual financial statements. Institutions **to further include the year of the annual financial statements used** as part of the submission to NIPMO.

The full submission to NIPMO is to be accompanied by a letter from the institution, signed by its CEO or Vice Chancellor, as appropriate.

4 ANNEXURE A- LIST OF INSTITUTIONS REQUIRED TO MAKE A SUBMISSION

4.1 HIGHER EDUCATION INSTITUTIONS (HEIS)

1. Cape Peninsula University of Technology	14. University of Johannesburg
2. Central University of Technology	15. University of KwaZulu-Natal
3. Durban University of Technology	16. University of Limpopo
4. Mangosuthu University of Technology	17. University of Mpumalanga
5. Nelson Mandela University	18. University of Pretoria
6. North-West University	19. University of South Africa
7. Rhodes University	20. University of the Free State
8. Sefako Makgatho Health Sciences University	21. University of the Western Cape
9. Sol Plaatje University	22. University of the Witwatersrand
10. Stellenbosch University	23. University of Venda
11. Tshwane University of Technology	24. University of Zululand
12. University of Cape Town	25. Vaal University of Technology
13. University of Fort Hare	26. Walter Sisulu University

4.2 SCHEDULE 1 INSTITUTIONS

1. Agricultural Research Council	7. National Research Foundation
2. Council for Geoscience	8. South African Bureau of Standards
3. Council for Scientific and Industrial Research	9. South African Medical Research Council
4. Human Science Research Council	10. South African Nuclear Energy Corporation
5. Mintek	11. Water Research Commission
6. National Health Laboratory Service	

5 ANNEXURE B - DETERMINING THE FULL COST OF R&D AT HIGHER EDUCATION INSTITUTIONS (HEIs)

5.1 INTRODUCTION

In this Annexure, the full cost of an R&D project or activity at an HEI is set out. This approach is based on an initial proposal by Higher Education South Africa (HESA), now Universities South Africa (USAF), and as amended by the FCC, a subcommittee of NIPMO Advisory Board. The generally applicable definitions and terminology are set out at the end of this Annexure.

5.2 DETERMINING THE FULL COST OF R&D USING THE EXPENDITURE APPORTIONMENT BASIS

The Expenditure Apportionment Basis is deemed the most appropriate HEI sector wide method to allocate indirect costs to direct costs to determine the full cost of an R&D project or activity in such an institution. The full cost of an R&D project/activity is determined using the following equations:

Full Cost (FC) = Direct costs (DC) + Indirect costs (IC)
= Direct costs (DC) + (Indirect Cost Recovery Rate (ICRR) X Modified DC (*Modified DC discussed in further detail later*))

Hence, an important step in the process is to determine the Indirect Cost Recovery Rate (or ICRR) expressed as a percentage, for the institution.

5.3 THE HESA METHOD

From the Annual Financial Statements, as audited, the expenditure under Recurrent Unrestricted Expenditure excluding residences **(A)** (often referred to as Council funds) plus the Recurrent Restricted Expenditure excluding residences **(B)**, is deemed to be the total expenditure of the HEI, that is **A + B**. To note that bursaries form part of the expenditure of **A** and **B** above, but NSFAS grants are excluded from the calculation.

In the original HESA approach, it is assumed that **B** represents the total research expenditure of the HEI. Therefore, the proportion of expenditure on research or the Indirect cost allocation ratio (ICAR) **(D)** can be calculated as **D = B/(A + B).**

In order to determine the expenditure from institutional support departments less exclusions/ modifications **(or item E)** the following should be taken into account.

The expenditure from institutional support departments is deemed to be the **indirect cost** of an HEI and should be calculated from the management accounts of the HEI. These costs are typically the Vice Chancellor Office, central administration including Human Resources and Finance, maintenance, security and other such costs. **Exclusions** from the support departments' costs are DVC Research and Research Office costs, research training and development costs, and technology transfer and innovation support costs, which fall under

Direct research support costs **(G).** Other exclusions are costs directly related and specific to teaching activities, and these have to be motivated.

The support costs calculated from the management accounts of the HEI less the above two sets of exclusions (in order words Direct research support cost **(G)** and specifically motivated support costs), is deemed to be expenditure from institutional support departments **(E)** or the indirect cost of the HEI.

To apportion the Indirect Costs Attributable to Research **(F)**, the indirect cost **(E)** is multiplied by the ICAR **(D)**. The sum of Direct Research Support Costs **(G)** and Indirect Costs Attributable to Research **(F)** is equal to the Total Indirect Research Costs **(H)**.

Hence, the indirect cost attributable to research, **H = F + G**. Therefore, the Indirect Cost Recovery Ratio (ICRR), from the first equations is equal to **H/B**. That is **ICRR = H/B.**

The HESA Method is summarised in the Table 1 below:

Indirect Cost Recovery (ICR) calculation, using the Expenditure Apportionment Basis	**Item**
Recurrent Unrestricted expenditure excluding residences	A
Recurrent Restricted expenditure excluding residences	B
Total cost (sum of the above): A + B	C
Indirect cost allocation ratio (ICAR) (%): B/C	D
Determine total expenditure from support departments, with certain exclusions	E
Indirect cost attributable to research: D x E	F
Direct research support costs	G
Total indirect research cost: F + G	H
The indirect cost recovery rate (ICRR) (%): H/B	I

5.4 COMMENTS AND REFINEMENTS OF THE HESA METHOD

It was assumed in the HESA method that the Recurrent Unrestricted Expenditure excluding residences **(A),** reflects the direct costs of the teaching and learning mandate of an HEI. This is not necessarily accurate as **A** also includes the majority of the expenditure for support departments. However, in the full cost model of a HEI, the support departments also have to carry their share of indirect costs, so the indirect cost allocation ratio (ICAR) **(D)** for research remains:

Indirect cost allocation ratio (ICAR) **D = B/(A + B)** **for the case where B is deemed to be the total cost of research*

Further, direct research expenditure, such as an allocation of academic staff time to research, research equipment expenditure and operational research expenditure, may be included in **A.** If these research costs can be readily calculated, they can be itemised as **A1** and included in the cost of research of the institution.

Recurrent Restricted Expenditure excluding residences **(B)**, is deemed to reflect the direct R&D expenditure of an HEI in the HESA model. However, some HEIs have stated that only a portion of this expenditure is R&D related and have divided B into two components for the purposes of the calculation of the ICRR, namely **B1**: research related costs, and **B2**: non-research related costs. If **B2** is material and the split can be done without causing an administrative burden to the institution, it is the preferred approach.

In the instance where an HEI can determine **A1**, the total research expenditure of an HEI would be {**B** (or **B1**) + **A1**)}. Hence, in this instance, the indirect cost allocation ratio (ICAR) **(D)** for research is **D** = {**B** (or **B1**) + **A1**}/(**A** + **B**)

As in the HESA Model, the expenditure from institutional support departments **(E)** is deemed to be the **indirect cost** of an institution and should be calculated from the management accounts of the HEI. As mentioned above, these costs are typically central administration, maintenance, security and other such costs, but excludes Direct research support costs, which are reflected separately in item **G**. Any further exclusions to the expenditure of the support departments need to be itemised and motivated in the submission to NIPMO as teaching specific exclusions. The support costs of the HEI less the above two sets of exclusions (G and specific motivations), is deemed to be the expenditure from institutional support departments **(E)** or indirect cost of the university.

The above referenced Direct research support costs **(G)** include but are not limited to the DVC responsible for research, the personnel and running costs of the Research Office, researcher training costs, innovation and technology transfer costs, and other direct research support specific costs such as Faculty research support personnel and the operating costs thereof (if possible to calculate). If the proportion of use of an HEI library for research is deemed to be higher than the ICAR value, **(D)**, then a HEI may motivate for this higher proportion to be included in the Direct research support costs **(G).** In such a case, the balance of the library costs should be excluded from **E.**

Many HEIs have experienced problems in the determination of items **E** and **G** from their management accounts. To assist in these cases, paragraph 7.2 below gives details of the methodology to be used to calculate **E** and **G** using the HEMIS approach.

5.5 REFINED METHODOLOGY

Table 2 below summarises the refined methodology to calculate the Indirect Cost Recovery Rate (ICRR) for a HEI:

Table 2: ICRR calculation, using Expenditure Apportionment Basis

Item name	Item	Calculation	Source data*
Recurrent Unrestricted Expenditure excluding residences	**A**		*AFS*
Research related costs (optional)	***A1***		
Recurrent Restricted expenditure excluding residences	**B**	B1 + B2	*AFS*
Research related costs (optional)	***B1***		*MA*
Non-research related costs (optional)	***B2***		*MA*
Total expenditure	**C**	A + B	
Indirect cost allocation ratio (ICAR) (%)	**D**	B/C or (B + A1)/C or (B1 + A1)/C	
Determine expenditure from institutional support departments less exclusions/ modifications (to be motivated)	**E**		*MA*
Indirect cost attributable to research	**F**	D X E	
Direct research support costs	**G**		
Total indirect research cost	**H**	F + G	
The indirect cost recovery rate (ICRR)(%)		H/B or H/(B + A1) or H/B1 + A1)	

** The fourth column allows for the institution to give the source of the amount given, for example, Annual Financial Statements (AFS), management accounts (MA) etc.*

To determine the Indirect Cost Recovery Rate (ICRR), the refined methodology is applied as follows:

Recurrent Unrestricted Expenditure **(A)** and Recurrent Restricted Expenditure **(B)**, excluding residences, are added together to calculate Total Expenditure **(C)**.

The Indirect Cost Allocation Ratio (ICAR) **(D)** is expressed as the ratio of the total research expenditure to the Total Expenditure **(C)**.

The institutional expenditure for support departments, less the Direct Research Support Costs **(G)** and/or other exclusions or modifications, where required and motivated, is deemed to be the indirect cost of the HEI **(E)**. The Indirect Costs Attributable to Research (F) is Indirect Cost Allocation Ratio (ICAR) **(D)** multiplied by indirect cost of the HEI **(E)**.

The sum of direct research support costs **(G)** and indirect costs attributable to research **(F)** is equal to the total indirect research costs **(H)**. The ICRR **(I)** is expressed as a percentage of the total indirect research costs **(H)** to the total research related expenditure; that is: **ICRR = H/B or H/(B + A1) or H/(B1 + A1).**

➢ *To please note:* When costing a division of a HEI (such as a Faculty, Technology Station or Research Group), then the actual direct R&D costs of that division should be calculated, as well as the actual indirect costs, including indirect costs allocated by the central administration. The ICRR is calculated as the percentage ratio of the indirect costs to the direct costs of that division.

5.6 DETERMINING THE VALUE OF ITEMS E AND G

It was observed that HEIs are not consistent in calculating the Total Expenditure from Institutional Support departments **(E)** with exclusions, and the Direct Research Support Costs **(G)**.

5.6.1 HEMIS programme categories

The Higher Education Management Information System (HEMIS) identifies 13 programme categories in its Programme Classification Structure (PCS) which HEIs undertake to achieve their objectives. These 13 programme categories with sub-categories are:-

Primary Programmes	**1. 0100 : Instruction**	**2. 0200: Research**
	3. 0300: Public Service	
Direct Support For Primary Programmes	**4. 0400: Academic Support**	**5. 1400: Academic Development**
	• *Libraries (0401)*	• *Access and Admissions Testing (1401)*
	• *Museums and Galleries (0402)*	• *Foundation Programmes Development (1402)*
	• *Educational Media Services (0403)*	• *Academic Staff Development and Research Capacity Development (1403)*
	• *Academic Information and Communication Technology Support (0404)*	• *Course and Curriculum Development (1404)*
	• *Ancillary Support (0405)*	• *Teaching and Learning Efficiency (1405)*
	• *Academic Programme Administration (0406)*	• *Language and Writing Skills Development (1406)*
	• *Research Administration (0407)*	• *Education Technology Development (1407)*
	• *Public Service Administration (0408)*	• *Academic Engagement and Public Service Development (1408)*
	• *Academic Advising (0409)*	• *Innovation and Technology Transfer Development (1409)*
		• *HIV/AIDS Integration (1410)*
		• *Internationalisation (1411)*
Indirect Support For Primary Programmes	**6. 0500: Student Services**	**7. 0600: Institutional Support**
	• *Student Services Administration (0501)*	• *Executive Management (0601)*
	• *Information and Comm. Tech (ICT) Support for Student Services (0502)*	• *Legal Services (0602)*
	• *Social and Cultural Development (0503)*	• *Financial Operations (0603)*

	• *Student Sport (0504)*	• *Financial Aid Administration (0604)*
	• *Counselling and Career Guidance (0505)*	• *Administrative Info and Comm. Tech (ICT) Services (0605)*
	• *Campus Health Services (0506)*	• *Space Management (0606)*
	• *Transportation Services (0507)*	• *Human Resources Services (0607)*
	• *Graduate Placement and Student Placement (0508)*	• *General Administration and Logistical Services (0608)*
		• *Student Admissions, Records and Examinations (0609)*
		• *Public Relations, Marketing and Fund Raising (0610)*
		• *Staff Social and Cultural Development (0611)*
	8. 1600: Institutional Development	**9. 0700: Operation and Maintenance of Physical plant**
	• *Strategic Planning (1601)*	• *Physical Plant Administration (0701)*
	• *Organisational Development (1602)*	• *Facilities Planning and Activities Funded by the Capital Budget (0702)*
	• *Quality Management (1603)*	• *Building Maintenance (0703)*
	• *Management Information Services 1604)*	• *Custodial Services (0704)*
	• *Institutional Research (1605)*	• *Utilities (0705)*
	• *Organisational Transformation and Employment Equity (1606)*	• *Grounds Maintenance (0706)*
		• *Major Repairs and Renovations (0707)*
		• *Other Services (0708)*
	10. 0800: Bursaries	**11. 0900: Auxiliary enterprises**
	• *First Qualification Bursaries and Awards (0801)*	
	• *Higher Qualification Bursaries and Awards (0802)*	
Unrelated – Independent Of Primary Programmes	**12. 1000: Hospitals**	**13. 1100: Independent Operations**

5.6.2 Expenditure from institutional support departments (E)

The total indirect expenditure from support departments **(E)** is calculated from indirect support for primary programmes with exclusions. HEIs will be able to map the trial balance to the sub-categories using the list above. Some HEIs already report on these categories. To calculate this expenditure **(E)**, HEIs must use the Council Controlled Funds only. Expenditure from institutional support relating to undergraduate students as well as undergraduate bursaries should be excluded if it can be easily identified. Therefore, **E** is the sum of the expenditure from the following programme categories:-

Inclusions	*Exclusions*
0400: Academic Support minus Libraries (0401)	0900: Auxiliary enterprises
0500: Student Service	1000: Hospitals
0600: Institutional Support	1100: Independent Operations
1600: Institutional Development	0800: Bursaries - First Qualification Bursaries and Awards (0801) Cost of Capital

	Provision for Bad Debt
0700: Operation and Maintenance of Physical plant Depreciation	

5.6.3 Direct Research Support Expenditure (G)

Direct Research Support Expenditure **(G)** is calculated from direct support for primary programmes and postgraduate bursaries. Some HEIs have indicated that the bulk of their library expenditure is used to support research, in this case, the library should fall under this category. HEIs will be able to map the trial balance to the sub-categories using the list below. To calculate this expenditure **(G)**, HEIs must use the Council Controlled Funds only. Therefore, **G** is the sum of the expenditure from the following programme sub-categories:-

0400: Academic Support

- Research Administration (407) (Admin support of research from Office of the DVC / Chair /Dean/ Director of research /Faculty Research Offices

1400: Academic Development

- Research Capacity Development (1403)
- Innovation and Technology Transfer Development (1409)

0800: Bursaries

5.7 TECHNOLOGY STATIONS (TS)

TS was established to enable HEIs to provide technology development services to small and medium enterprises (SMEs). The TS activities offer an opportunity to bridge the gap between local suppliers and industry to take advantage of the recapitalisation and expansion programmes by enhancing competitiveness of local suppliers through technology improvement. Most of these TS depends on the main institution for a budget line item and some of the services.

During the review of the submissions it was noted that some of the TS's prefer to have or use a separate ICRR from the main institution. This is completely in order and in line with the provision of the IPR Act. However, a TS Unit cannot be selective in choosing the values to use for calculating an ICRR. As mentioned above, when costing a division of an HEI (such as a Faculty, Technology Station or Research Group), then the actual direct R&D costs of that division should be calculated, as well as the actual indirect costs, including indirect costs allocated by the central administration.

The ICRR is calculated as the percentage ratio of the indirect costs to the direct costs of **that** division. An application that puts forward a mixture of institution wide values for some aspects of the calculations and division specific values for other aspects of the calculations will not be accepted.

5.8 APPLICATION OF THE ICRR

This is for information purposes only and need not be submitted to NIPMO

According to the IPR Act, where it is feasible to determine the indirect costs to a research project on a case by case basis accurately then that approach is suitable to determine the full cost of an R&D project. However, the accurate determination of the **indirect** costs for each and every R&D project is likely to be challenging and time consuming, and the alternate method outlined in the following equation should be used:

Full Cost (FC) = **Direct costs** (DC) + (**Indirect Cost Recovery Ratio** (ICRR) x **modified DC**).

It should be kept in mind that Table 2 set out how to determine the ICRR. Table 3 below sets out how this ICRR/ICRRs are applied to determine the indirect cost of multiple research projects (as a best estimate).

Table 3: Direct Cost modifications/exclusions for purposes of calculating Indirect Cost recovery for a research project, using the NIPMO approved ICRR. When calculating the indirect cost recovery for a research project/activity, the following deductions should be made from the budget for direct costs before applying the ICRR.

• Bursaries – all bursaries included in the direct costs	*M*
• Major equipment – *all amounts exceeding R250 000 per complete equipment item as a default or application of professional judgement.*	*N*
• Subcontractors – *all amounts exceeding R250 000 per subcontract equipment item as a default or application of professional judgement.*	*O*
Full Cost calculation	
▪ **Direct cost** of a project/activity	J
▪ **Indirect Cost** recovery: Apply ICRR (I) to direct cost of activity (J), with certain exclusions (M/N/O) Therefore: **I** (as determined in table 2) x (**J-*M*-*N*-*O***)	K
Full Cost = J + K	L

For the calculation of the **Indirect costs**, a factor, **modified DC**, is used. This **modified DC** is the DC value less the following considerations:

1) As the funder of the research project is already funding directly the **bursaries** applicable for the project, the ICRR) should not be applied to this amount (denoted M).

2) Applying the ICRR to very expensive pieces of equipment would bias the indirect costs of a project, as the indirect costs of purchasing equipment are relatively constant irrespective of the amount. Hence, obtaining an indirect cost for the purchase of an expensive piece of equipment is most easily achieved by applying professional judgement to the amount for which the ICRR should be applied. The over-riding principle in allocating indirect costs to the purchase of research equipment is to ensure that under-recovery is avoided (denoted N).

3) Likewise, the indirect costs associated with sub-contractors does not warrant the application of the ICRR to the full amount, as these overhead costs are deemed to be lower than those applicable to the other direct costs such as direct staff and labour. Again, professional judgement should be applied to determine the amount of the sub-contractor cost to which the ICRR should be applied. Again, the same over riding principle applies to ensure that under-recovery is avoided.

5.9 GLOSSARY OF TERMS

CONCEPT	DESCRIPTION	GUIDELINE FOR CALCULATION
Expenditure apportionment basis	Allocation of total support costs between R&D and non-R&D activities by using either the institution's total expenses per major activity or by applying an institution-specific formula	
Full Cost (of an R&D project)	The sum of direct R&D costs for a particular project plus the Indirect cost recovery for a particular project as calculated specifically or using the approved ICRR of the institution or a division ICRR.	Calculation in line with the applicable NIPMO endorsed approach set out above
Direct costs (DC)	All costs (including direct **staff and labour costs**) directly attributable to, or incurred as a result of, the goods or services produced, or to be produced, as part of the R&D, project, or in fulfilling a contract; including all direct capital R&D cost and direct recurrent R&D cost	Includes any expenditure incurred specifically for a R&D activity, project or contract, and includes direct **staff and labour costs**, bursary costs, consumable costs, the costs of equipment purchased for the specific project, rental costs or depreciation costs for other equipment used, direct research support costs (if applicable), the costs of sub-contractors, travel, reporting costs, and any direct administration costs.
Modified DC	This is a modified direct cost used in the calculation of a research project or activity in a HEI. It is the **direct costs** less the bursary cost (M), the cost of equipment above an approved threshold (N) and the cost of sub-contractors above an approved threshold (O).	
Indirect cost (of an R&D project)	Sum of all indirect costs attributable to R&D carried out at an institution, or in a research project.	
Indirect cost recovery rate (ICRR)	The rate as approved by the NIPMO to calculate the Indirect Cost recovery to be added to the Direct Cost of a R&D project to give a particular entity the full cost of that R&D project	A single ICRR for the entire institution and/or divisional ICRRs may be calculated

Recurrent unrestricted expenditure, excluding residences (item A)	Unrestrictive expenditure that forms part of the operational teaching and learning mandate and which excludes: (a) abnormal items or cost anomalies that are not part of maintainable operational expenditure; (b) student accommodation costs	(Source – Audited Annual Financial Statements)
Recurrent restricted cost, excluding residences (item B)	Expenditure that forms part of the R&D mandate and are restrictive, excluding: (a) abnormal items or cost anomalies that are not part of maintainable restricted expenditure; (b) student accommodation costs	It is assumed that all restricted funds pertain to R&D. If the non-R&D component is material then the university should exclude it. Source – Audited Annual Financial Statements)
Staff and labour cost	Cost of personnel directly involved in a research project.	Costing on basis of "full cost to company" of person and estimated productive time spent on project.
Direct research support cost (item G)	Sum of direct R&D support costs and costs incurred within the institution in support of R&D, primarily personnel and operating costs of the Research Office	These costs include but are not limited to the DVC responsible for research, the personnel and running costs of the Research Office, researcher training costs and other direct research support specific costs). If possible, the costs of Faculty research support personnel and operating costs thereof should also be included in the Direct Research support costs.
Bursaries	All student bursaries (under- and postgraduate) and research bursaries related to the execution of a project should be included in the direct costs of the project.	

6 ANNEXURE C - DETERMINING THE FULL COST OF R&D AT SCHEDULE 1 INSTITUTIONS

6.1 INTRODUCTION

In this Annexure, the full cost of R&D for Schedule 1 institutions is set out. This approach is based on a general convergence of approaches followed by Schedule 1 institutions in their full cost calculations submitted to NIPMO. The generally applicable definitions and terminology are set out at the end of this Annexure.

The full cost of an R&D project is typically determined using the following equation:
Full Cost (FC) = Direct costs (DC) + Indirect costs (IC)

According to the IPR Act, where it is feasible to determine the indirect costs to a research project on a case by case basis accurately then the above approach is suitable to determine the full cost of an R&D project. *However*, the accurate determination of the indirect costs for each and every R&D project is likely to be challenging and time consuming; instead these indirect costs should be approximated using a calculated indirect cost recovery rate (ICRR).

Hence an important step in the process is to determine the full cost of R&D is to first determine the ICRR, for the institution as a whole or, where required, a division of the institution (such as a Unit, Division or Research Group).

6.2 DETERMINING THE INDIRECT COST RECOVERY RATE (ICRR)

Determining the ICRR of an institution (or unit), requires a three-step process:

1. Calculation of the total **Indirect costs (IC)** associated with the chosen entity;
2. Selection of the most appropriate **Direct Cost Denominator** or **Relevant Cost Driver** for the entity; and
3. Calculation of the ICRR using the said Indirect costs and Direct Cost Denominator.

6.2.1 Step 1: Calculation of total indirect cost

Indirect costs (IC) for the chosen entity would normally be calculated as follows:

IC = "indirect operating costs" + "indirect manpower costs" + "other allocated indirect costs"

Additional note: Should a Schedule 1 entity calculate separate ICRR's at divisional level, this calculation of IC needs to include all allocated indirect costs. These costs typically represent a cost recovery charge from centralised cost centres elsewhere within the institution or from costs centres within the division. The full cost of R&D is not accurately calculated in cases where:

- central cost centres are allocated Medium Term Expenditure Framework Funding to reduce the net costs to be recovered at a divisional level or
- the central cost centres' costs are not wholly allocated to divisional levels.

In the two aforementioned scenarios, the calculation must make allowance for the total indirect costs to be included in the divisional calculation and not a "subsidised" or reduced amount.

Some institutions prefer to refer to the IC calculation as their Overheads and then calculate an Overhead percentage from that. In the example below it is illustrated how to convert such an Overhead into an ICRR.

6.2.2 Step 2: Select appropriate cost denominator or cost driver

Selection of the Direct Cost Denominator or Relevant cost driver would typically be between either the total direct costs or the attributable manpower cost. Both are acceptable, but, as can be seen from the example below, it is of critical importance to do all further calculations based on exactly the same Direct Cost Denominator/Relevant cost driver.

If more convenient for a specific institution, other Denominators/Cost drivers may also be used, provided it is then used consistently for all further calculations.

6.2.3 Step 3: Calculating ICRR using selected denominator or cost driver

The ICRR is calculated as follows: ICRR = **IC / selected cost denominator or cost driver.** The amounts used in the calculation must be derived from and/or be reconcilable to the most recent audited annual financial statements.

6.3 DETERMINING THE ICRR VIA EXAMPLES

Let's consider the following example using **Direct Cost** as the Cost Denominator/Driver:

Applying step 1, the institution calculated:

- total Indirect Cost or Overhead of Institution as 30 units;
- total Direct Cost as 70 units;
- thus the total cost of the institution adds up to 100 units.

Applying step 2, the institution selected "direct cost" as the Cost Denominator/Driver.

Applying step 3: ICRR (%) = IC / Direct Cost Denominator total * 100
Therefore, ICRR = 30 units / 70 units
= 0,429 * 100
= 42.9%

Control Test:
Full Cost = Direct Cost + (ICRR X **Direct Cost**)
= 70 units + (0,429 X **70 units**)
= 100 units

Let's consider the following example using **attributable manpower** as the Cost Denominator/Driver:

Applying step 1, the institution calculated:

- total Indirect Cost or Overhead of Institution as 30 units;
- total Direct Cost as 70 units (of which 45 units are from attributable manpower costs);
- thus, the total cost of the institution adds up to 100 units.

Applying step 2, the institution selected "attributable manpower" as the Cost Denominator/Driver

Applying step 3: ICRR (%) = IC / Direct Cost Denominator total *100.

Therefore, ICRR = 30 units / 45 units
= 0,667 * 100
= 66.7%

Control Test:

Full Cost = Other Direct Cost + Manpower Cost + (ICRR X **Manpower Cost**)
= 70 units + (0,667 X **45 units**)
= 100 units

Full Cost (FC) = Direct costs (DC) + (Indirect Cost Recovery Ratio (ICRR) x Selected Direct Cost Denominator).

It cannot be stressed enough that the ICRR should be calculated on the basis of the same direct cost component as that selected for the Direct Cost Denominator.

6.4 APPLICATION OF THE ICRR

This is for information purposes only and need not be submitted to NIPMO

Now that we have calculated an ICRR, it is important to apply it to a research project/ multiple research projects (as a best estimate).

The following equation would apply to (the case where the direct cost is the driver). determine the Full Cost (FC) = Direct costs (DC) + (Indirect Cost Recovery Ratio (ICRR) x modified DC).

It should be kept in mind that in paragraph 2 above, we determined the ICRR of the institution applying three steps. Table 4 below sets out how this ICRR are now applied to determine the indirect cost in multiple research projects (as a best estimate).

Table 4: Direct Cost modifications/exclusions for purposes of calculating Indirect Cost recovery for a research project, using the NIPMO approved ICRR. When calculating the indirect cost recovery for a research project/activity, the following deductions should be made from the budget for direct costs before applying the ICRR.

• Major equipment – *all amounts exceeding R250 000 per complete equipment item as a default or application of professional judgement*	*N*
• Subcontractors – *all amounts exceeding R250 000 per complete equipment item as a default or application of professional judgement*	*O*
Full Cost calculation:	
▪ **Direct cost** of a project/activity	J
▪ **Indirect Cost** recovery: Apply ICRR (I) to direct cost of activity (J), with certain exclusions (N/O) Therefore: **I** (as determined applying the three-step process) x (**J-*N*-*O***)	K
Full Cost = J + K	L

For the calculation of the **Indirect costs**, a factor, **modified DC**, is used. This **modified DC** is the DC value less the following amounts:

1) Applying the ICRR to very expensive pieces of equipment would bias the indirect costs of a project, as indirect costs of purchasing equipment are relatively constant irrespective of the amount. Hence, obtaining an indirect cost for the purchase of an expensive piece of equipment is most easily achieved by applying professional judgement to the amount for which the ICRR should be applied. The over-riding principle in allocating indirect costs to the purchase of research equipment is to ensure that under-recovery is avoided (denoted N).

2) Likewise, the indirect costs associated with sub-contractors does not warrant the application of the ICRR to the full amount, as these overhead costs are deemed to be lower than those applicable to the other direct costs such as direct staff and labour. Again, professional judgement should be applied to determine the amount of the sub-contractor cost to which the ICRR should be applied. Again, the same over riding principle applies to ensure that under-recovery is avoided.

6.5 GLOSSARY OF TERMS

CONCEPT	DESCRIPTION	GUIDELINE FOR CALCULATION
Full Cost of a R&D project (FC)	The sum of direct costs plus the indirect cost for a particular project/activity as calculated specifically or using the approved ICRR of the institution or a division ICRR.	Calculation as per NIPMO guideline set out above.
Direct costs (DC)	All costs (including direct **staff and labour costs**) directly attributable to, or incurred as a result of, the goods or services produced, or to be produced, as part of the R&D, project, or in fulfilling a contract; including all direct capital R&D cost and direct recurrent R&D cost	Includes any expenditure incurred specifically for a R&D activity, project or contract, and includes direct **staff and labour costs**, bursary costs, consumable costs, the costs of equipment purchased for the specific project, rental costs or depreciation costs for other equipment used, direct research support costs (if

		applicable), the costs of sub-contractors, travel, reporting costs, and any direct administration costs.
Indirect cost (IC)	Sum of all indirect costs attributable to R&D carried out at an institution, or in a research project.	
Indirect operating costs	Operating costs not allocated on a direct basis to or specifically incurred as a result of, the goods or services produced, or to be produced, as part of the R&D project.	These costs are not allocated directly to R&D projects and includes costs such as depreciation, rent paid, bank charges, interest paid, security costs, audit fees, finance support costs, HR support costs, legal costs, electricity, municipal rates, etc.
Indirect manpower costs	Manpower costs not allocated on a direct basis to or specifically incurred as a result of, the goods or services produced, or to be produced, as part of the R&D project.	These includes costs such as management salaries, cost of leave, unallocated staff costs and administrative staff costs.
Attributable manpower cost	Manpower costs directly deployed on a R&D project (otherwise known as direct manpower cost).	A timesheet system needs to be in place in order to obtain an accurate attributable manpower amount.
Other allocated indirect costs	Should you calculate separate ICRRs at a divisional level, these costs may be applicable and represent a cost recovery charge from centralised cost centres elsewhere within the institution or from costs centres within the division.	These costs are allocated to cover centralised management and support costs.
Selected Direct Cost Denominator or **Relevant cost driver**	Most applicable basis on which an institution wishes to recover their indirect costs	Typically, direct costs or attributable manpower is used. However other basis may be more applicable.
Indirect cost recovery rate (ICRR)	The rate as approved by NIPMO to calculate the Indirect Cost recovery to be added to the Direct Cost of a R&D project to give a particular entity the full cost of the R&D project.	A single ICRR for the entire institution and/or divisional ICRRs may be calculated.

[END]