

Cost aggregation

Build the budget from the work: estimate, roll the estimates up, then add the reserves.

CONTROL ACCOUNT	SUPPLIER	CITY	TOTAL
Design (months 1–2)	60	34	94
Build and integrations (3–5)	300	28	328
Migrate, test, train (6–8)	60	54	114
Project management	0	40	40
Work estimate	420	156	576

Illustrative, € thousand. City: staff, training, licences, €12k overheads. On top: €24k contingency, €40k change budget.

WHAT IT IS

Estimate each **work package** with the people who will do it. Group the packages into **control accounts**, each with one owner, where budget, schedule and actual costs are compared. Cost types form the columns, so rows and columns must reach the same total. Map each account to the organisation's accounts. PMI (Project Management Institute) calls this roll-up cost aggregation.

HOW IT WORKS

- 01 Estimate each work package with the people doing it.
- 02 Sort the costs: direct or indirect, fixed or variable.
- 03 Group packages into control accounts; totals must match.
- 04 Challenge for optimism; add each reserve on its own line.

MID-LEVEL · WORKED EXAMPLE

Apply it well

The situation: A city team has eight months to move resident parking permits online, with a supplier on a €420k fixed price.

The project manager estimates each work package with the team and the supplier, in four control accounts: supplier €420k + the city's staff, training and overheads €156k = €576k. Contingency and a change budget for approved changes get their own lines: €576k + €24k + €40k = €640k.

In the exam: Show the build-up from work packages, with each reserve on its own line. Make the totals add up.

SENIOR · WORKED EXAMPLE

Design and lead it

The situation: A city is joining 14 online services under one login over 30 months, with two suppliers, nine owners of old systems and a base estimate of €11.5m.

The project manager sets one cost structure for all, with a control account per phase and contract. A review challenges the estimates for optimism before the steering board approves the phases: €2.7m + €3.6m + €3.6m + €1.6m = €11.5m.

In the exam: Explain who estimates, how estimates are challenged, and who may move money between accounts.

WHERE IT SITS

IPMA · ICB4	PMI · PMBOK® GUIDE 8 · PMP® EXAM	APM · BOK 8 · PMQ EXAM
4.5.7.1 cost structures; 4.5.7.2 budgets on the cost breakdown; 4.5.7.4 aggregating work packages	Guide: Develop Budget, cost aggregation (§2.4.2.3, p. 64); control accounts (p. 140). Exam outline: Process, task 6	BoK (APM's Body of Knowledge) §5.8.1 Cost planning (cost types, optimism bias); cost breakdown structure (§5.2.1). PMQ (APM's Project Management Qualification) objective 22a

Sources: IPMA ICB4 (2015); PMI, PMBOK® Guide, 8th ed.; PMI, PMP® Examination Content Outline (2026); APM Body of Knowledge, 8th ed.; APM, PMQ handbook (v6, 2026)

Key: IPMA = International Project Management Association; ICB4 = IPMA's Individual Competence Baseline (4.5.7 etc.: its competence elements); PMBOK® Guide = PMI's body-of-knowledge guide; PMP® = PMI's Project Management Professional; APM = Association for Project Management. Unofficial study material for IPMA®, PMI® and APM exams. Not affiliated with, endorsed by or approved by IPMA, PMI or APM, and not an accredited or endorsed training provider. IPMA® and IPMA ICB® are registered trademarks of IPMA in Switzerland and other countries. PMI, PMP, CAPM and PMBOK are registered marks of Project Management Institute, Inc. APM is a trade mark of the Association for Project Management. Other marks belong to their owners. PMP® exam facts are from PMI's public PMP® Examination Content Outline (2026); check the current version on pmi.org. APM's qualifications are its own; this series is not an APM Accredited Provider or APM Endorsed. Examples use a fictional city and its projects. Levels (this series' labels): Mid-level = moderately complex projects (IPMA Level C, PMI's PMP®); Senior = complex projects and people (IPMA Level B, APM's Chartered Project Professional).

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