

From: [REDACTED]
To: [REDACTED]
Cc: [Enquiries](#); [REDACTED]
Subject: RFI 030 - Document request: working paper on uncertainty and risk
Date: 08 January 2020 11:22:27
Attachments: [201906 AC uncertainty and risk WP \(1\).pdf](#)

Dear [REDACTED],

Thank you for your enquiry received on 16 December 2019, which we are treating as a request under the Freedom of Information Act. This has been allocated reference RFI 030.

A copy of the working paper on Allowable Costs, uncertainty and risk referred to in our recent consultation documents, which you requested, is attached to this email.

If you are dissatisfied with the handling of your request, you have the right to ask for an internal review. Internal review requests should be submitted within two months of the date of receipt of the response to your original request and should be addressed to: Neil Swift, c/o Enquiries, enquiries@ssro.gov.uk.

If you are not content with the outcome of the internal review, you have the right to apply directly to the Information Commissioner for a decision. The Information Commissioner can be contacted at: Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, Cheshire, SK9 5AF.

I note from our records that in March 2019 you were kind enough to provide my colleague [REDACTED] with an update on your work related to the single source procurement framework. You have also had previous correspondence with [REDACTED] the Director of Legal and Policy at the SSRO.

You may be aware that we are currently [consulting](#) on our proposed recommendations for the 2020 review of the regulatory framework for single source defence contracts. The consultation ends on the 28th of February 2020. If you would be interested in speaking with us during the consultation period to share insights from your work on the development of the regulatory regime we would welcome the opportunity to hear your views. Please contact me if you would like to arrange a meeting or telephone discussion with colleagues at the SSRO.

Yours sincerely,

[REDACTED]

[REDACTED]

Manager, Regulation and Economics team
Single Source Regulations Office

3rd floor | Finlaison House | 15-17 Furnival Street | London | EC4A 1AB

☎: 020 3771 4790

✉: [\[REDACTED\]](#)

From: [REDACTED]

Sent: 16 December 2019 10:09

To: Consultation Responses <Consultations@ssro.gov.uk>

Subject: Re document request: working paper on uncertainty and risk

WARNING: The sender of this email could not be validated and may not match the person in the "From" field.

CAUTION: External Email

Dear Sir/Madam

If you might permit the briefest introduction, my name is [REDACTED], senior lecturer in law at the University of Birmingham. I am currently preparing a monograph on the single source procurement framework. I write to enquire as to whether the SSRO could provide a document referenced in its consultations.

The SSRO has recently undertaken its Allowable Costs guidance review 2019. It has published stakeholder responses to a working paper on uncertainty and risk (October 2019). As I understand it, this working paper was issued to the SSRO's Operational Working Group concerning the SSRO Guidance in Part H: Risk-related costs and associated guidance in Part E.5: Insurance. The SSRO has published the stakeholder responses to the working paper which purports to include a summary of the working paper. However, the SSRO has not published the working paper itself.

I fully appreciate the commercial in-confidence and other issues that might preclude publication. However, it would be useful to obtain a copy of the working paper. Previously, the same was the case in respect of the SSRO's working papers on allowable costs, research and development and the capital servicing adjustment. On request, the SSRO very kindly provided these reports and which have proven invaluable in discerning how the guidance on allowable costs is evolving.

I recognise that you are extremely busy, however, could I politely request this document?

It would greatly aid my work and, as ever, I would acknowledge my thanks to the SSRO for providing it.

I very much look forward to hearing from you.

Best regards,

[REDACTED]

SSRO

Single Source
Regulations Office

Pricing guidance working paper Allowable Costs, uncertainty and risk

June 2019

Contents

1.	Introduction	3
2.	Use of terms	4
3.	Current guidance	7
4.	SSRO opinions and determinations	8
5.	Stakeholder views	10
6.	Discussion of potential guidance changes	11
7.	Questions for stakeholders and next steps	19
	Appendix 1: The consideration of uncertainty in determining Allowable Costs	20
	Appendix 2: International comparisons	22

1. Introduction

- 1.1 Section 20 of the Defence Reform Act 2014 (the Act) states that the SSRO must issue guidance about determining whether costs are Allowable Costs under qualifying defence contracts (QDCs) and qualifying sub-contracts (QSCs). The SSRO aims to keep its guidance current and relevant and consult with stakeholders as required to provide clarity and certainty for those involved in single source defence contracting.
- 1.2 Following engagement with stakeholders on its priorities for work in 2019/20, the SSRO has carried out an initial review of its current statutory guidance on Allowable Costs¹ to consider what improvements might be made in the guidance in Part H: Risk-related costs and associated guidance in Part E.5 Insurance.
- 1.3 The SSRO is issuing this working paper to members of its Operational Working Group² to ensure that we understand the issues fully and can capture information and examples from stakeholders before proposing any specific changes to the guidance.
- 1.4 This working paper was issued on 10 June 2019. Stakeholder views on this working paper are welcomed and should be sent to consultations@ssro.gov.uk by 5 July 2019. Members of the SSRO's Operational Working Group will have the opportunity to discuss the issues raised in this paper at a workshop taking place on 2 July 2019. Comments on this working paper will inform our consideration of the need for guidance changes. Any proposed changes will be subject to a public consultation in autumn 2019. If, following a consultation, changes are to be made, the SSRO aims to publish final guidance in January 2020 for application to QDCs and QSCs agreed from 1 April 2020. We will, however, consider the application date of any new guidance as part of a public consultation.
- 1.5 The matters discussed in this paper concerning the treatment of uncertainty and risk in determining Allowable Costs provide a foundation for our later consideration of guidance on the cost risk adjustment (Step 2) in the process to determine the contract profit rate for a QDC or QSC.³ The SSRO intends to review the guidance it provides on cost risk adjustment in 2020/21 following the completion of work in 2019/20 on its review of contract profit rates and further work being undertaken by the Ministry of Defence, in consultation with its single source contractors, on a new approach to agreeing an appropriate cost risk adjustment for a QDC or QSC.

¹ SSRO (2019) *Allowable Costs Guidance (Version 4)*.

² Comprising representatives of the Ministry of Defence, ADS Group and single source defence contractors.

³ Section 3 in SSRO (2019) *Guidance on the Baseline Profit Rate and its Adjustment 2019/20 (Version 5)*.

2. Use of terms

Allowable Costs

2.1 The Act and Single Source Contract Regulations 2014 (the Regulations) require that the price paid to a primary contractor under a QDC or QSC is determined using the formula:

$$(CPR \times AC) + AC$$

- a. *CPR* is the contract profit rate for the contract, determined in accordance with Regulation 11.
 - b. *AC* is the contractor's Allowable Costs. That is, those costs which the Secretary of State, or an authorised person, and the contractor are satisfied meet the requirement set out in Section 20(2)(a) to (c) of the Act that they are: appropriate; attributable to the contract; and reasonable in the circumstances.
- 2.2 Regulations 10(4) to 10(11) describe how the Allowable Costs used in contract pricing are to be determined in each of six contract pricing methods permitted by the Regulations. The Allowable Costs will be either:
- a. the costs as estimated at the time of agreement (in firm, estimate-based⁴, and target pricing methods);
 - b. the costs as estimated at the time of agreement adjusted in accordance with specified rates or indices between the time of agreement and a specified time (in fixed and volume-driven pricing methods); or
 - c. the actual Allowable Costs determined during the contract or after the contract completion date (in cost-plus and estimate-based⁵ pricing methods).
- 2.3 While it is not expressly stated in the Regulations whether 'costs as estimated at the time of agreement' (Regulations 10(4), 10(7), 10(11)) has the same meaning as 'estimated allowable costs' (Sections 16(1)(b)(ii) and 17(2) of the Act and Regulations 11(3) and 13(2)) we consider it reasonable to assume these are synonymous.

Uncertainty and risk

2.4 The International Organisation for Standardisation (ISO) defines 'risk' as 'the effect of uncertainty on objectives', which may be either positive or negative.⁶ Uncertainty arises where there is limited understanding of an event, its likelihood of occurring, or its consequences. In this paper, we refer 'to costs which are uncertain in occurrence or value' to capture both dimensions of risk and uncertainty surrounding costs which may be incurred in the performance of contracts.⁷

⁴ The Allowable Costs by which the contract profit rate is multiplied.

⁵ The Allowable Costs which are added to the product of the contract profit rate and the Allowable Costs as estimated at the time of agreement.

⁶ International Organization for Standardization (2009) *ISO 73:2009 Risk Management – Vocabulary*.

⁷ While the terms 'risk' and 'uncertainty' may be used distinctively in some circumstances, for example, in the field of cost modelling, we consider that they are indistinguishable for the purposes of determining Allowable Costs.

- 2.5 In establishing the price of a QDC or QSC it is necessary to determine that particular costs to be included in the contract price are appropriate, attributable to the contract and reasonable in the circumstances.
- a. Where the particular costs under consideration are yet to be incurred, the amounts to include in the contract price will be estimates as there will be varying degrees of (un)certainty as to the occurrence or value of the costs. The extent of (un)certainty will depend on, for example, how far into the future the costs are expected to be incurred and how well those costs are understood.
 - b. Where the particular costs under consideration have already been incurred, there should be no (or very little) uncertainty surrounding the amounts to include in the contract price as the actual costs incurred and their values can be observed. In practice, the values of some costs incurred may be established by indirect means, or estimated, because it is impractical or uneconomical to determine the actual costs through direct observation, for example, labour costs derived from the application of labour rates to recorded hours.⁸
- 2.6 Accordingly, whether a contract is priced on Allowable Costs estimated at the time of agreement or on actual Allowable Costs determined during the contract or after contract completion influences the extent of certainty surrounding the amount of the Allowable Costs.
- a. When a contract is priced on Allowable Costs estimated at the time of agreement, while some costs may have already been incurred (sunk costs) it is likely that most of the costs of performing the contract are yet to be incurred. The occurrence and value of the costs to be considered for inclusion in the contract price will, therefore, be subject to some degree of uncertainty.
 - b. When a contract is priced on actual Allowable Costs determined during the contract or after contract completion, the costs have already been incurred. By virtue of the cost being 'actual' there should be no (or very little) uncertainty as to the occurrence or value of the costs which are to be considered for inclusion in the contract price.⁹
- 2.7 In the remainder of this paper, we use the terms estimated and actual Allowable costs as follows:
- a. estimated Allowable Costs – meaning the estimate at the time of agreement of the actual Allowable Costs that will be incurred in performing the contract, including any costs intended to be within the scope of the overall estimate incurred prior to the time of agreement whose value is known; and
 - b. actual Allowable Costs – meaning the Allowable Costs incurred in performing the contract determined during the contract or after the contract completion date, including any costs incurred whose value, for reasons of practicality, is estimated.

⁸ Regulation 29(3) permits that 'Up to 2% of the actual allowable costs [reported in the contract costs statement] may, without explanation, be estimated costs'.

⁹ We note that risk arising may have influenced the actual cost incurred and is addressed at 3.14 of the current statutory guidance on Allowable Costs.

Cost risk

2.8 Uncertainty around an estimate at the time of agreement of the actual Allowable Costs of a particular contract gives rise to the risk that it may be higher or lower than the actual Allowable Costs which are subsequently incurred in performing that contract. This cost uncertainty (or 'cost risk') is what is intended to be reflected in the cost risk adjustment at Step 2 of the process to determine the contract profit rate for a QDC or QSC.

Contingency

2.9 The Regulations recognise that contractors may include an element of 'contingency' in Allowable Costs. Contractors are required:

- a. to report an annual profile, or the total amount, of 'any risk contingency element included in the allowable costs' for a QDC or QSC (Regulation 25(2)(c)(i) and elsewhere); and
- b. to describe in the contract pricing statement for a QDC or QSC the 'facts, assumptions and calculations relevant to each element of the allowable costs (including those relevant to any risk or contingency included in the allowable costs) (Regulation 23(2)(e)(i)).

2.10 The Project Management Institute defines 'contingency reserve' (or 'contingency allowance') as 'the budget within the cost baseline that is allocated for identified risks that are accepted and for which contingent or mitigating responses are developed'.¹⁰ A contingency reserve is intended to address known uncertainties that can affect a project and may provide for a specific activity, the whole project, or both. It is distinct from 'management reserve' which is an amount of budget outside the cost baseline for a project which is reserved for unforeseen events ('unknown unknowns') that can affect a project.

2.11 For the purpose of determining Allowable Costs, the SSRO understands the term 'contingency' to mean an amount identified in the costs under a contract related to known but uncertain expenditure that may be incurred. Its allocation to particular costs will be determined as those costs are incurred and their values become known.

2.12 There are a range of approaches by which the contingency for a project may be determined.

¹⁰ Project Management Institute (2013) *A Guide to the Project Management Body of Knowledge – Fifth Edition*.

3. Current guidance

3.1 Part H of the SSRO current Allowable Costs guidance¹¹ is reproduced below.

Current paragraph reference	Guidance
H.1.1	Risk that can be estimated and modelled may be an Allowable Cost within the contract price if agreed by the Secretary of State. Costs associated with compensating the contractor for such risk should be evidenced, be appropriately modelled, and only be recovered once.
H.1.2	A risk over which the contractor has no or little control, may be covered under the provision of an adjustment to the baseline profit rate if the relevant evidence is provided. Further detail on the basis of a cost risk adjustment is covered in the SSRO's Guidance on the Baseline Profit Rate and its adjustment
H.1.3	Given that there is no consistent definition of the various terms relating to risk, the underlying principle to be applied is that costs associated with compensating the contractor for risk should be clearly evidenced and only be recovered once.

3.2 Our review is also considering Part E.5 of the guidance which relates to insurance, a mechanism by which cost risk may be transferred to third parties. That part of the guidance is reproduced below.

Current paragraph reference	Guidance
E.5.1	The costs of insurance may be Allowable, but the nature of the insurance cover will be material to whether the costs satisfy the Appropriate, Attributable and Reasonable test. The costs of insurance covering buildings and equipment, employer's liability or vehicles and plants may be Allowable.
E.5.2	However, it would be neither appropriate nor reasonable in the circumstances for the taxpayer to pay for the contractor to be covered against its own poor performance in delivering the contract in question and, accordingly, the costs of such insurance should not be Allowable.
E.5.3	Accordingly, insurance against faulty workmanship (see E.2 above), defective parts, breach of contract or loss of profit associated with poor performance should not be Allowable. If insurance cover is partly for a purpose for which the costs are not Allowable, then the whole of the insurance costs should not be Allowable. A part of the costs may be Allowable if the contractor demonstrates what the cost would be with any inappropriate, non-attributable or unreasonable cover excluded.

3.3 Attention is drawn to the relevant parts of the guidance in the discussion in section 6.

¹¹ SSRO (2019) *Allowable Costs Guidance (Version 4)*.

4. SSRO opinions and determinations

- 4.1 The SSRO gives opinions and legally binding determinations in response to referrals from the Ministry of Defence (MOD), contractors and sub-contractors. At the time of drafting this working paper there have been three determinations concerning matters related to cost risk.
- 4.2 In 2015, the SSRO published its first opinion on matters related cost risk in a contract.¹² These included the extent to which cost risk (referred to in the opinion as ‘price risk’) was an Allowable Cost in the contract and the method used for estimating a value for cost risk.
- 4.3 The SSRO considered that an appropriate provision for risk could be an Allowable Cost in contracts that use a regulated pricing method where the contractor bears a substantial element of cost risk. In this case, the proposed contract used the Target Cost pricing method, and both parties had agreed on the inclusion of cost risks in the contract. The SSRO, therefore, concluded that this contract could include a provision for risk in the Target Cost, where risk was borne by the contractor and where it was adequately quantified.
- 4.4 On the matter of quantification, in this case the parties had used a Monte Carlo analysis. This is a simulation technique that contributed to an assessment of the combined impact of uncertainty surrounding the estimates of particular costs on the estimate of Target Cost. The SSRO’s view was that, while Monte Carlo analysis was an appropriate technique to use for this purpose, it might be appropriate in large and complex projects to use more than one technique for the purpose of cross-validation.
- 4.5 In 2016, the SSRO published a determination on matters relating to the Adour availability contract.¹³ The SSRO was asked for a determination on two matters by Rolls-Royce regarding its contract with the MOD for the availability of Adour engines, which power Hawk jet aircraft. One of the issues was whether the level of cost risk adjustment to the baseline profit rate was appropriate. The contractor asserted that the engine availability contract was inherently risky as there was a degree of uncertainty about the maintenance and replacement work that would be required to ensure daily engine availability. The contract should, therefore, attract the maximum cost risk adjustment (+25 per cent of the baseline profit rate).
- 4.6 The SSRO considered that it was relevant in determining a cost risk adjustment to have regard to the ways in which risk has been mitigated, either in the contract price or in the terms of the contract. In this case the SSRO found that there had been significant mitigation of the risk of the contractor’s actual Allowable Costs differing from its estimated Allowable Costs. Substantial provision for risks had been priced into the Allowable Costs via “estimating risk” and risks had been further managed by contractual provisions. The SSRO considered that, after the effect of mitigations through Allowable Costs, the contract’s provisions and opportunities for positive risk, there was no more than average risk of Rolls-Royce’s actual Allowable Costs differing from its estimated Allowable Costs. Therefore, the SSRO determined that the cost risk adjustment should be zero per cent.
- 4.7 In 2019, the SSRO published a determination on the extent to which labour costs (derived from estimated labour rates) were Allowable Costs in a QDC for the support and maintenance of equipment.¹⁴ The labour rates were estimated in circumstances where there was a degree of uncertainty about the labour required from the contractor’s business over

¹² SSRO (2015) *Opinion 1*.

¹³ SSRO (2016) *SSRO Determination: Determination on Matters Relating to the Adour Availability Contract*.

¹⁴ SSRO (2019) *Determination on the Extent to Which Labour Costs in a Qualifying Defence Contract are Allowable*.

the life of the contract. There were also revisions being made to the MOD's work programmes that would be likely to impact on labour required from the contractor. The SSRO accepted that the approach of applying forecast labour rates for the business to the estimated labour hours for the contract could produce an estimate of labour costs that satisfied the requirements of Allowable Costs.

- 4.8 The contractor had used a top-down approach to estimate its labour rates. The SSRO noted that, in this case, the uncertainty in the MOD's programmes made it unlikely that a bottom-up approach to estimating labour rates would have been more accurate. However, this did not mean that a top-down approach would always be most appropriate, nor that a bottom-up approach would never be appropriate. The choice of the most suitable estimating methodology to deploy should be based on its characteristics and the contract in question.

5. Stakeholder views

5.1 Industry stakeholders and the MOD have previously provided comments on the SSRO's Allowable Costs guidance which are relevant to how uncertainty in cost estimates should be considered in determining Allowable Costs. The key points from stakeholders' feedback is set out below.¹⁵

Stakeholder feedback

- The guidance should consider the application of profit to the expected Allowable Costs in delivering the contract inclusive of risk and uncertainty.
- The guidance should make a clear statement to reflect that an element of the profit is the reward for taking cost risk and the estimated allowable cost is the mean expected allowable incurred cost.
- The guidance should be clear that contractors should price at the mean expected allowable cost which includes risks at that mean expected outcome and that the risk faced is the level of volatility on that outcome.
- The guidance implies that the estimate of Allowable Costs is taken at other than the 50th percentile, which should not be the case.
- The guidance should suggest that contracts are priced at the mean expected Allowable Cost and therefore should include risk allowance at this point. The current guidance does not consider the volatility of the risk that should be reflected in the Allowable Cost. More clarity is needed on whether the approach allows pricing at some point other than the mean expected Allowable Cost.
- The distinction made in the guidance concerning risks over which the contractor has little or no control and other risks is inappropriate to determine whether risks inform the Allowable Costs for the purpose of the price formula or whether the risks inform the cost risk adjustment in determining the contract profit rate.

5.2 These matters are considered within the discussion of potential guidance changes in the next section.

¹⁵ We have not sought to include or respond in this paper to feedback which relates to guidance on the Step 2 cost risk adjustment.

6. Discussion of potential guidance changes

- 6.1 The SSRO aims to provide principles-based guidance but recognises that specificity may be an aid to consistent application of the guidance by stakeholders. We highlight below areas where the SSRO considers it may be most helpful to revise its Allowable Costs guidance concerning uncertainty and risk to aid understanding and application by stakeholders.

The effect of uncertainty on Allowable Costs

- 6.2 We have noted previously¹⁶ that there may be a variety of uncertainties when contracts are agreed which may impact on the ability of the MOD and contractors to determine what the actual Allowable Costs, profit or price of a contract will be. These uncertainties may be categorised as:
- a. threats – which may increase costs if they materialise or reduce them if they don't; or
 - b. opportunities – which may reduce costs if they materialise or increase them if they don't.
- 6.3 The relevance of these uncertainties in contract pricing depends on whether the contract is priced using estimated or actual Allowable Costs.

Estimated Allowable Costs

- 6.4 Where a contract price is based on estimated Allowable Costs (a single number, potentially selected from a range of possible outcomes identified by modelling), the presence of uncertainty about the occurrence or value of particular costs gives rise to the possibility that the Allowable Costs used in the contract price are an under- or over-estimate of the contractor's actual Allowable Costs. As the contract price is determined by applying profit to the estimated Allowable Costs, any variance between the estimated and actual Allowable Costs will result in a higher¹⁷ or lower¹⁸ amount of profit for the contractor and a different contract profit rate to that expected at the time of agreement (subject to the operation of any contract terms and conditions and any final price adjustment¹⁹).
- 6.5 The Regulations do not specify how any uncertainty about costs is to be addressed in determining Allowable Costs for a QDC or QSC priced on estimated Allowable Costs. We consider it follows from the requirements of Allowable Costs²⁰ that the estimate used aims to anticipate the actual Allowable Costs that the contractor will incur in delivering the contract. The result should be that the contracting authority pays a price that reflects the actual cost of performing the contract and the contractor earns the profit expected at the time of agreement. (The extent of uncertainty about the occurrence or value of particular costs will determine the extent to which the parties can have confidence that the estimate of Allowable Costs will be accurate: a matter to be reflected, at Step 2, in determining the contract profit rate.)
- 6.6 The current guidance aims to achieve the outcomes described above. Estimated Allowable Costs will be those estimated costs which satisfy the requirements to be appropriate, attributable to the contract and reasonable in the circumstances (the AAR test). The SSRO's

¹⁶ SSRO (2018) *Cost Risk and Incentives in Qualifying Defence Contracts: Recommendations to the Secretary of State for Defence*.

¹⁷ Where the Allowable Costs in the price overestimate the actual Allowable Costs.

¹⁸ Where the Allowable Costs in the price underestimate estimated Allowable Costs.

¹⁹ An adjustment described in Section 21 of the Act and Regulation 16, which limits excessive profits or losses for contractors.

²⁰ Costs which are determined to be appropriate, attributable to the contract and reasonable in the circumstances.

guidance on the AAR test identifies that, among other things, Allowable Costs would be those which are incurred or anticipated to be incurred (paragraph 3.1) to enable the performance of the contract. An estimate which included costs that it was not anticipated would be incurred, or which excluded costs that it was anticipated would be incurred and which fulfilled the requirements of Allowable Costs, would not satisfy the AAR test.

- 6.7 The SSRO does not consider that its guidance should be prescriptive about the approaches to be taken by contractors to estimating costs where there is uncertainty about their occurrence or value. However, as indicated in our recent determination on the extent to which labour costs (derived from estimated labour rates) were Allowable Costs in a QDC,²¹ we consider that the estimating methodology used by the contractor should be appropriate to the circumstances of the case and capable of generating a reasonably accurate estimate of the actual Allowable Costs that will be incurred by the contractor. What level of accuracy is considered reasonable should be informed by the circumstances of the case. We consider it may be helpful for the guidance to provide some direction on the supporting information (such as risk registers) that might be considered when determining whether estimated costs are Allowable. We welcome stakeholders' views on this.
- 6.8 At the time of estimation, contractors cannot know which anticipated costs with uncertain occurrence or value will coincide with their estimated value, and which have been under- or over-estimated. In determining the total estimated Allowable Costs for contract pricing, a range of possible cost outcomes may need to be considered, from which the Allowable Costs may be drawn.²² We provide a simplified illustration of this in Appendix 1 and welcome views on whether it would be helpful to include this in the guidance.
- 6.9 Stakeholders have expressed the view that when there is a range of cost estimates the estimated Allowable Costs should be set at a pre-determined point on the range, for example, the mean (expected value) or the median (50th percentile). We note that contractors have options as to how they incorporate risk and uncertainty in their cost estimates and that estimating the actual Allowable Costs the contractor will incur in performing the contract may necessitate different approaches in different circumstances. Given the desirability of tailoring the estimating approach to the circumstances of the case, we consider it would be inappropriate for the SSRO's guidance to specify the statistical basis or techniques by which the value of estimated Allowable Costs is to be established.
- 6.10 The current guidance notes that in determining whether costs are reasonable in the circumstances, consideration should be given, among other things, to the circumstances of the case. Such circumstances include 'uncertainty and risk affecting estimated costs' (paragraph 3.14d). We consider it may be beneficial, with this in mind, for the guidance to additionally highlight the importance of faithful representation in determining estimated Allowable Costs and the need to consider whether the process by which the estimate has been generated demonstrates the associated qualities of:
- a. completeness – taking into account all relevant considerations while ignoring irrelevant considerations;
 - b. neutrality – taking neither an overly optimistic nor overly pessimistic view about the costs being estimated and the associated uncertainties; and
 - c. freedom from error – being computationally correct.

²¹ SSRO (2019) *Determination on the Extent to Which Labour Costs in a Qualifying Defence Contract are Allowable*.

²² Examples would be Monte Carlo, expected monetary value, and what-if scenario analysis.

- 6.11 We welcome stakeholders' views on whether these or other additions to the guidance would be helpful.

Actual Allowable Costs

- 6.12 Where a contract is priced based on actual Allowable Costs, the contractor will be paid for the actual costs that it has incurred which the relevant parties are satisfied meet the requirements to be appropriate, attributable to the contract and reasonable in the circumstances. By definition, these actual costs will include costs whose occurrence or value may have been uncertain (or even unanticipated) at the start of the contract but which materialised during the contract and were incurred by the contractor. Costs whose occurrence was uncertain at the start of the contract but which did not materialise during the contract and were not incurred have no bearing on the actual Allowable Costs used for contract pricing. While the actual Allowable Costs used for contract pricing may be higher or lower than an estimate made at the time of agreement, any variance from the estimate will be reflected in the price paid by the contracting authority for the contract.
- 6.13 We do not consider that any additional specific guidance is required to assist the relevant parties to determine whether costs which were uncertain in occurrence or value at the time of agreement, but which materialised during the contract and were incurred by the contractor, are Allowable Costs in contracts priced on the basis of actual Allowable Costs. We consider that the general guidance on determining whether costs are Allowable Costs is sufficient for this purpose, but we welcome views on this.

Contingency

- 6.14 In accordance with their own policies, contractors may wish to include an element of contingency related to cost uncertainty in the estimate of Allowable Costs. The Regulations do not specify how any contingency included in Allowable Costs is to be determined. Neither is the term presently defined in the SSRO's guidance on Allowable Costs or contract reporting.
- 6.15 Contractors have told us that they estimate costs in different ways and that there is no set approach to determining the level of contingency in contracts.²³ Our analysis of data reported by contractors found that for many contracts no contingency is reported (Box 1).

Box 1: Risk contingency in QDCs and QSCs

By November 2018, the contractors in 74 of 159 contracts agreed between 1 April 2015 and 30 September 2018 had reported a risk contingency in the Allowable Costs for those contracts. The total risk contingency across these contracts was £756 million (4 per cent of the total Allowable Costs in contracts agreed). The average risk contingency was around 3 per cent of the Allowable Costs in the contract.

Contractors often provide supporting documents and cost models with their contract reports. As part of the SSRO's 2017 examination of cost risk and incentives in QDCs agreed in 2015/16 and 2016/17, we reviewed cost models for contract where no specific risk contingency had been recorded in the relevant report fields. Those cost models indicated an estimated £213 million of risk contingency within the Allowable Costs for those contracts. This was described in the cost models in a variety of ways, for example, 'risk', 'estimating uncertainty', 'contingency'.

²³ SSRO (2018) *Cost Risk and Incentives in Qualifying Defence Contracts: Recommendations to the Secretary of State for Defence*.

Determining the extent to which a contingency is an Allowable Cost

- 6.16 While, by its nature, the actual allocation of any contingency to particular costs cannot be identified at the time of agreement, we consider that the amount of contingency should reflect the anticipated costs which it is intended to fund if they were to be incurred. We think it may be helpful to provide additional guidance on the consideration of contingency when determining estimated Allowable Costs, noting, for example, that:
- a. the consideration of whether a contingency is appropriate should be made with reference to the types of costs with uncertain occurrence or value that the contingency is intended to cover;
 - b. the consideration of whether a contingency is attributable to the contract should be made with reference to whether the costs it is intended to cover enable the performance of the contract, are applied to the contract only once, and are not expected to be recovered from any other source; and
 - c. the consideration of whether the amount of a contingency is reasonable in the circumstances should be made with reference to uncertainty at the level of particular costs and in aggregate, such that the total estimated Allowable Costs reflects the actual Allowable Costs the contractor expects to incur. Consideration should be given to the level of uncertainty around the costs that the contingency is intended to cover, reflecting the likelihood of those costs occurring and the possible amounts that might be incurred in respect of those costs. (An illustration of this is provided in Appendix 1.)
- 6.17 The guidance might usefully provide examples of the sort of information that might support the determination of contingency as an Allowable Cost, such as risk registers and cost benchmarking analysis.
- 6.18 Where the contract price is calculated based on the actual Allowable costs, we would not expect contingency for uncertain costs to be included in the Allowable Costs used for the purposes of pricing. Actual costs will have been incurred and their values should be known. Any contingency identified in previous estimates of the price of the contract should have either been allocated to actual Allowable Costs or retired.
- 6.19 We welcome stakeholders' views on the need for guidance in this area, together with examples of the evidence used to date to show that a contingency meets the requirements of Allowable Costs.

High-impact, low-probability events

- 6.20 In estimating the costs that will be incurred in performing a contract, the contracting parties may identify potential costs arising from high-impact, low-probability events. It may be impractical, misleading or unsatisfactory to identify these as particular costs for the purpose of contract pricing or to include contingency for them in the estimated Allowable Costs. Such costs may, in any case, fail to meet the requirement to be attributable to the contract as the low probability of occurrence would indicate the contractor does not expect to incur them. However, both parties to the contract may desire clarity about who would bear these costs should they materialise. Apportionment or limitation of liability for such costs, if they arose, may feature in the contract's terms and conditions.
- 6.21 We consider it may be helpful for the guidance to provide some direction as to the appropriate treatment of uncertain costs related to high-impact, low-probability events in determining Allowable Costs. We welcome evidence from stakeholders on whether and how such costs have been treated in QDCs and QSCs to date.

Risks that can't be reliably quantified

- 6.22 The current guidance indicates that only uncertain costs which can be 'estimated and modelled' (H.1.1) may be Allowable Costs. Our position on this remains unchanged. We recognise that the extent to which the uncertainty of occurrence or value for particular costs can be quantified accurately varies, and it should be rare for it to be impossible to describe a plausible range of outcomes numerically. We consider that the relevant parties should take a proportionate approach to determining the type and standard of information they require concerning uncertainty affecting costs (consistent with the current guidance at paragraph 2.6) when satisfying themselves as to whether those costs are Allowable.
- 6.23 Where the uncertainty around whether potential costs will be incurred, or their value, cannot be reliably quantified, it is not clear how the relevant parties would be able to determine that an associated value to be included in the estimate of Allowable Costs met the requirements to be either attributable to the contract or reasonable in the circumstances. We welcome views from stakeholders on the manner in which costs whose uncertainty cannot be reliably quantified may be taken into account in the determination of Allowable Costs. We also welcome examples showing how the relevant parties have, in these circumstances, determined such costs are appropriate, attributable to the contract and reasonable in the circumstances.

Unforeseeable events

- 6.24 Contractors might wish to hold a management reserve (see paragraph 2.10) for costs whose occurrence cannot be anticipated at the time of contract agreement, but which would be unavoidable if they arose. We consider it would be difficult for the parties to determine that such an item, for example, a mark-up on costs for 'risk', was an Allowable Cost given that the relevant parties need to be satisfied that any costs to be incurred are appropriate, attributable to the contract and reasonable in the circumstances. Where the type, purpose and amount of expenditure is unknown these requirements of Allowable Costs cannot be met.
- 6.25 We welcome views from stakeholders on the necessity of considering a management reserve for unknown costs to be an Allowable Cost, together with examples showing how the parties have, to date, determined that any such items are appropriate, attributable to the contract and reasonable in the circumstances.

Risk mitigation

- 6.26 Contractors will have varying degrees of influence or control over uncertainties affecting the occurrence or value of costs. Some uncertainty regarding estimated costs may be reduced or removed through action taken by contractors. We consider that such actions to manage or mitigate uncertainty are relevant considerations in determining Allowable Costs and that it may be helpful to expand the current guidance to provide direction in this regard. We discuss relevant matters in the sections below.

Managing uncertainty

- 6.27 We consider that the determination of whether costs which are uncertain in occurrence or value are Allowable Costs should take account of whether the contractor has put in place, or anticipates putting in place, measures to manage and mitigate the uncertainty associated with those costs where it would be reasonable to expect this. The assessment of the need for, or desirability of, actions to manage and mitigate uncertainty should be conducted on a case-by-case basis. It may not, in all cases, be possible, necessary or desirable to reduce uncertainty surrounding a particular cost. In considering what is reasonable in the circumstances, the relevant parties should consider whether mitigating actions demonstrate due regard for economy and efficiency in the use of resources. In considering economy and

efficiency, it would be relevant to consider how the costs of any mitigating actions compare to the benefits of reduced risk and uncertainty as a result of those actions.

- 6.28 Where it is agreed that action should be taken to mitigate uncertainty in a cost that is deemed to be an Allowable Cost, the costs of mitigation may be Allowable subject to satisfying the requirements to be appropriate, attributable to the contract and reasonable in the circumstances. Costs of risk mitigation that are associated with uncertain costs which are not Allowable Costs in the contract would not be attributable to the contract and, therefore, not Allowable.

Post-mitigated uncertainty

- 6.29 We consider that where the contractor takes action to mitigate the uncertainty surrounding costs which are uncertain in occurrence or value, and the costs of mitigating action are deemed to be Allowable Costs, the amount of the uncertain costs which are determined to be Allowable Costs should reflect the post-mitigated circumstances.

Insurance

- 6.30 Insurance is a particular form of mitigation where a third party (the insurer) undertakes to provide a guarantee of compensation for specified loss, in this case, relating to crystallised uncertainty surrounding the occurrence or value of a cost, in return for a fee (the insurance premium). In the UK, some types of insurance are compulsory, for example, employers' liability insurance. Some other types of insurance may be necessary to satisfy regulatory requirements for operating in certain sectors, for example, the nuclear industry. Where they have a choice, contractors will decide whether and how much insurance cover to purchase, and from whom, in accordance with their preferred risk management strategy. Alternatively, they may bear cost uncertainty (self-insure) or seek to transfer this to customers through the terms of contracts.
- 6.31 Where a contractor purchases insurance cover, the current guidance on insurance (Part E.5) indicates how such costs might be determined to be Allowable Costs, with reference to some specific types of insurance. We consider that the current guidance could more comprehensively address how the requirements of Allowable Costs should be interpreted in determining whether insurance costs are Allowable Costs in a QDC or QSC. This would allow for a more general application of the guidance to a wider range of cases.
- 6.32 Following our initial review of the SSRO's guidance and that related to other regimes (see Appendix 2) we consider it might be helpful for the guidance to note that:
- a. insurance costs would only be appropriate and attributable to the contract where the uncertain costs for which insurance cover is being provided would be Allowable Costs in the contract if they were incurred;
 - b. where insurance policies provide cover across multiple contracts, a proportion of the cost of those policies may be attributable to the contract subject to the application of a suitable and agreed methodology for apportioning costs to contracts;
 - c. the potential costs which would be met by the insurer if incurred (the insured costs) cannot be attributable to the contract as they would be recovered from another source if they materialise;
 - d. uninsured costs, for example, policy excesses or costs exceeding the limits of insurance cover, may be Allowable Costs where these meet the requirements to be appropriate, attributable to the contract and reasonable in the circumstances; and

- e. in determining whether insurance costs are reasonable in the circumstances, consideration should be given to matters such as market testing, the options available and whether the ratio of insurance costs incurred to insured costs avoided demonstrates due regard for economy and efficiency in the use of resources.

6.33 Where a contractor transfers cost uncertainty to the contracting authority in a QDC or QSC through the Allowable Costs we consider that no specific additional guidance is required on determining Allowable Costs beyond that which is the subject of discussion in this paper.

6.34 We welcome views on the proposed revisions to the guidance on determining whether insurance costs are Allowable Costs. In particular, we welcome examples of any types of insurance for which stakeholders consider the costs might be inappropriately determined to be Allowable or not Allowable as a result of the principles indicated in paragraph 6.32.

Cost risk adjustment

6.35 The relative likelihood that the estimated Allowable Costs used in contract pricing will be found to be lower or higher than the actual Allowable Costs, the extent of any variance that might occur, and the potential for this to result in lower- or higher-than-expected profit, will influence a contractor's perception of the desirability of entering into a contract.

6.36 The legislation provides for a cost risk adjustment²⁴ to be made at Step 2 of the process to determine the contract profit rate for a QDC or QSC 'to reflect the risk of the primary contractor's actual allowable costs under the contract differing from its estimated allowable costs' (Section 17(2) of the Act and Regulation 11(3)). The SSRO provides guidance to assist in the determination of a cost risk adjustment taking account of the particular circumstances of the contract.²⁵ The expected effect of the cost risk adjustment is to increase or decrease the profit that the contractor expects to earn such that contracts where the risk of cost (and profit) variance is greatest should generate more profit than those where there is no or minimal risk of cost (and profit) variance.

6.37 We have discussed in this paper that for contracts priced on the basis of estimated Allowable Costs the estimate used should seek to anticipate the actual Allowable Costs that will be incurred by the contractor in delivering the contract. Where the estimate achieves this, the contractor will earn the profit element of the contract price determined at the time of agreement, as there will be no variance between the estimated and actual Allowable Costs. In practice, the extent to which it is possible to estimate the actual Allowable Cost with accuracy varies. The approach taken to incorporating cost uncertainty in the estimated Allowable Costs has implications for how the risk of variance between estimated and actual Allowable Costs is assessed and, consequently, the determination of any cost risk adjustment in the contract profit rate.

6.38 The SSRO will review its guidance on cost risk adjustment in 2020/21, following the conclusion of work being undertaken as part of our review of contract profit rates, and informed by work being undertaken by the MOD in 2019 on an approach to determining an appropriate cost risk adjustment for a particular contract. However, we welcome comments from stakeholders now about the potential implications of the changes to Allowable Costs guidance discussed in this paper for the SSRO's guidance on the cost risk adjustment.

²⁴ An adjustment of up to ± 25 per cent of the baseline profit rate.

²⁵ SSRO (2019) *Guidance on the Baseline Profit Rate and its Adjustment 2019/20 (Version 5)*.

Changes to reporting

- 6.39 The outcome of the current work to review the Allowable Costs guidance on uncertainty and risk may indicate the need for or desirability of changes to information related to uncertainty and risk related to Allowable Costs that is reported. Any such reporting changes might be addressed by updating the SSRO's reporting guidance and associated reporting system (DefCARS) or may require changes to the legislation related to reporting requirements.
- 6.40 We have not identified any specific changes to reporting arising from the potential changes to Allowable Costs guidance discussed in this paper. However, we welcome stakeholders' feedback on the usefulness of the current reporting guidance²⁶ related to matters discussed in this paper together with any suggestions for how this might be improved.
- 6.41 The SSRO is undertaking a separate review of reporting requirements during 2019/20 in three priority areas agreed with stakeholders. Any feedback provided by stakeholders in response to this working paper which has relevance for that review will be taken into consideration accordingly. The SSRO plans some further engagement with stakeholders on the review of reporting requirements during summer 2019.

²⁶ SSRO (2019) *Defence Contract Analysis and Reporting System (DefCARS) Reporting Guidance and System User Guide for Defence Contractors (Version 6)*.

7. Questions for stakeholders and next steps

- 7.1 The SSRO is seeking evidence from stakeholders about why and how the current guidance may need to be amended. Ideally, proposals will be supported with examples and evidence that demonstrate the reason for change, but we will also take into account more general expressions of views that draw on professional knowledge and relevant experience.
- 7.2 In section 6 we ask for your views on specific areas of the guidance and our initial consideration of the issues at hand. More generally, we are asking for stakeholder views on the following questions:
- a) What difficulties are experienced by contractors in applying the SSRO's Allowable Costs guidance in relation to costs which are uncertain in occurrence or value?
 - b) What examples are there that might support a change to the Allowable Costs guidance on uncertainty and risk?
- 7.3 The SSRO welcomes views from stakeholders on any aspect of this working paper, both in writing to **consultations@ssro.gov.uk** by 5 July 2019 and at the Operational Working Group workshop to be held at our offices on 2 July 2019.
- 7.4 The SSRO also invites stakeholders to discuss any of the issues raised in this working paper on an individual basis. To arrange a discussion please contact David Pottruff via david.pottruff@ssro.gov.uk.

Appendix 1: The consideration of uncertainty in determining Allowable Costs

A1.1 To provide a simple illustration of factors relevant to the consideration of uncertainty in determining Allowable Costs for a contract, we identify below a contract which has two cost items: A and B. Each has an equal (50 per cent) probability of costing either £11 million or £10 million.

Probability	Cost A	Cost B
50%	£11m	£11m
50%	£10m	£10m

A1.2 Given the characteristics of the uncertainty around costs A and B, the possible total cost values are either £20 million, £21 million or £22 million.

Outcome	Cost A	Cost B	Total contract cost
A high / B high	£11m	£11m	£22m
A low / B high	£10m	£11m	£21m
A high / B low	£11m	£10m	£21m
A low / B low	£10m	£10m	£20m

A1.3 Mathematically, £21 million is the expected total cost (the mean of all the possible outcomes), which for the purposes of this example are the estimated Allowable Costs to be used in the contract pricing formula.²⁷ However, a simple equal apportionment of the estimated total cost between A and B results in £10.5 million for each item, which is not a possibility for either. Allocating £10 million to A and £11 million to B (or vice versa) is potentially misleading. This gives rise to the need to consider if the total estimated costs satisfy the AAR test given the uncertainty present.

A1.4 To illustrate the matter of application further, the total cost estimate can be reformulated into two known costs (A and B) and two costs whose occurrence is uncertain (C and D).

Cost	Probability	Cost	Expected cost
A	100%	£10m	£10m
B	100%	£10m	£10m
C	50%	£1m	£0.5m
D	50%	£1m	£0.5m

A1.5 A and B are known requirements for which £10 million each can be allocated. The total expected cost of C and D is £1 million, which is set aside as risk contingency and allocated to

²⁷ This is not intended to endorse a particular approach to cost estimating. We note that, while in this example the mean, median (50th percentile) and mode (most likely) are all the same value, this may not commonly be the case.

costs as it arises. The total expected cost of the contract is £21 million, as in the original formulation.

- A1.6 The parties are satisfied that the anticipated £10 million costs for A and B are Allowable Costs. While it is expected to incur the remaining £1 million due to costs C and D, it is not possible to say with certainty whether it will be used to cover the occurrence of cost C or cost D. Therefore, in this example, the parties would need to be satisfied that both C and D meet the AAR test for the £1 million risk contingency to be considered an Allowable Cost.

Appendix 2: International comparisons

A2.1 Below for reference is a summary of international guidance related to:

- a) the criteria for determining total costs of a contract;
- b) specific additional guidance that applies where an element of those costs is held as a contingency; and
- c) specific additional guidance that applies where an element of those costs are insurance costs

A2.2 We welcome stakeholder views on how this guidance compares to the SSRO's guidance.

Australian Government Department of Defence – Capability Acquisition and Sustainment Group (CASG) Cost Principles

A2.3 The CASG Cost Principles clarify what costs (Allowable Costs) may be attributed to the Department of Defence (DoD) contracts to which the Principles apply, and which may not (Unallowable Costs). The Principles operate within the test of 'reasonableness' and are not intended to mandate what costs industry are able to incur or not incur outside of its contracts with DoD. They also operate within an overarching framework of legislative and policy requirements concerning the proper management of public money and public property and rules for achieving value for money with procurements.

A2.4 With regard to total costs of a contract, the Principles require that:

The total cost of a contract is the sum of the direct and indirect costs allocable to the contract, incurred or to be incurred, less any allocable credits. In ascertaining what constitutes a cost, any generally accepted method of determining or estimating costs that is equitable and is consistently applied may be used.

[CASG Cost Principles](#), Cost principles, paragraph 12

A2.5 There are detailed guidelines on determining if a cost meets 'Reasonableness' and 'Allocability' tests. In particular:

A cost may be reasonable if, in its nature and amount, it does not exceed that which would be incurred by a prudent person in the conduct of competitive business.

[CASG Cost Principles](#), Cost principles, paragraph 15

A2.6 With regard to specific elements of total costs of the contract that are characterised as contingency, the Principles include the following additional guidance:

13. Contingency and Management Reserve

13.1. Contingencies shall be unallowable as a contract cost for cost reimbursement contracts, unless the costs are labour related or relate to a provision for statistically calculated warranty costs with respect to the goods and services being supplied under the contract.

13.2. For other contract types reasonable Contingencies/Management Reserve may be allowable. Contingencies/Management Reserve may be allowable if the company provides a fully costed risk register which identifies the risk events that these reserve elements cover.

13.3. *Unless supported by a fully costed risk register, the initial provision or increase of funding for a contingent liability is considered to be a setting aside of earned profits to meet possible liabilities against future profits and not a business operating cost, and therefore is an unallowable cost in Defence contracts.*

[CASG Cost Principles](#), Annex B – Specific Categories of Cost, Section 13

A2.7 With regard to specific elements of total costs of the contract that are characterised as insurance costs, the Principles include the following additional guidance:

31. *Insurance*

31.1. *Premiums, including statutory imposts incurred by the contractor in relation to risks usually insured against in the contractor's industry are allowable to the extent the costs are within the definition of contract cost, and include:*

- a. *the portion of the premium for the standing charges element of consequential loss insurance cover which relates to items of indirect expense allowable under the Principles;*
- b. *reasonable cost for Directors Liability for the local entity only; and*
- c. *premiums (or the applicable portion, as appropriate) for insurance on the lives of named key executives, for the benefit of the contractor to the extent that the costs are reasonable in accordance with the Principles.*

31.2. *The following premiums are unallowable as a contract cost (or the applicable portion, as appropriate) for insurance:*

- a. *against risks in respect of which the contractor does not effect insurance in the ordinary course of business (unless the conditions of contract provide otherwise or an Accounting Arrangement to the contrary has been established with Defence);*
- b. *against that element of "consequential loss" insurance which relates solely to loss of profit and protection of income (as distinct from standing charges insurance cover see paragraph (a)); and*
- c. *against risks in respect of which the conditions of the contract provide that Defence accepts liability for loss or damages.*

31.3. *Premiums for insurance may be allowable to the extent the costs are within the definition of contract cost and are allowable under Annex B paragraph 31.1. when:*

- a. *paid to a related company; or*
- b. *allocated from a global policy on a reasonable basis as part of a global overhead allocation; or*
- c. *charged by the contractor for risk carried by the contractor (provided any loss is to be borne by the contractor).*

31.4. *The contract cost shall be credited with the applicable portion of any recovery under a consequential loss insurance policy, to the extent that the amount received relates to costs allowed under paragraph 28.c) of the Principles.*

[CASG Cost Principles](#), Annex B – Specific Categories of Cost, Section 31

Government of Canada – Standard Acquisition Clauses and Conditions (SACC) Manual

A2.8 Section 1031-2 of the SACC Manual sets out the cost principles that apply to a wide range of Canadian government contracts.

A2.9 With regard to total costs of a contract, the Manual requires that these:

...must be the sum of the applicable direct and indirect costs which are, or must be reasonably and properly incurred and/or allocated, in the performance of the Contract, less any applicable credits. These costs must be determined in accordance with the Contractor's cost accounting practices as accepted by Canada and applied consistently over time.

[Contract Cost Principles](#), 1031-2 01 (2008-05-12) General Principle

A2.10 With regard to specific elements of total costs of the contract that are characterised as contingency, the Manual includes the following additional guidance:

Despite that the following costs may have been or may be reasonably and properly incurred by the Contractor in the performance of the Contract, they are considered non-applicable costs to the Contract:

...f. provisions for contingencies; ...

[Contract Cost Principles](#), 1031-2 07 (2012-07-16) Non-applicable Costs

A2.11 With regard to specific elements of total costs of the contract that are characterised as insurance costs, the principles include the following additional guidance:

Despite that the following costs may have been or may be reasonably and properly incurred by the Contractor in the performance of the Contract, they are considered non-applicable costs to the Contract:

...g. premiums for life insurance on the lives of officers and/or directors where proceeds accrue to the Contractor; ...

[Contract Cost Principles](#), 1031-2 07 (2012-07-16) Non-applicable Costs

United States of America – Federal Acquisition Regulation (FAR)

A2.12 Part 31 of the FAR sets out cost principles and procedures for 'the determination, negotiation, or allowance of costs when required by a contract clause'.

A2.13 With regard to total costs of a contract, the FAR requires that:

The total cost, including standard costs properly adjusted for applicable variances, of a contract is the sum of the direct and indirect costs allocable to the contract, incurred or to be incurred, plus any allocable cost of money pursuant to 31.205-10, less any allocable credits. In ascertaining what constitutes a cost, any generally accepted method of determining or estimating costs that is equitable and is consistently applied may be used.

Federal Acquisition Regulation 31.201-1 Composition of total cost

A2.14 There are detailed guidelines on determining if a cost meets standards of Reasonableness, Allocability, Standards promulgated by the CAS Board, or other limitations. In particular:

A cost is reasonable if, in its nature and amount, it does not exceed that which would be incurred by a prudent person in the conduct of competitive business.

Federal Acquisition Regulation, 31.201-3 Determining reasonableness

A2.15 With regard to specific elements of total costs of the contract that are characterised as contingency, the regulation includes the following additional guidance:

- (a) *“Contingency,” as used in this subpart, means a possible future event or condition arising from presently known or unknown causes, the outcome of which is indeterminable at the present time.*
- (b) *Costs for contingencies are generally unallowable for historical costing purposes because such costing deals with costs incurred and recorded on the contractor’s books. However, in some cases, as for example, terminations, a contingency factor may be recognized when it is applicable to a past period to give recognition to minor unsettled factors in the interest of expediting settlement.*
- (c) *In connection with estimates of future costs, contingencies fall into two categories:*
 - (1) *Those that may arise from presently known and existing conditions, the effects of which are foreseeable within reasonable limits of accuracy; e.g. anticipated costs of rejects and defective work. Contingencies of this category are to be included in the estimates of future costs so as to provide the best estimate of performance cost.*
 - (2) *Those that may arise from presently known or unknown conditions, the effect of which cannot be measured so precisely as to provide equitable results to the contractor and to the Government; e.g. results of pending litigation. Contingencies of this category are to be excluded from cost estimates under the several items of cost, but should be disclosed separately (including the basis upon which the contingency is computed) to facilitate the negotiation of appropriate contractual coverage. (See, for example, 31.205-6(g) and 31.205-19.)*

Federal Acquisition Regulation, 31.205-7 Contingencies.

A2.16 With regard to specific elements of total costs of the contract that are characterised as insurance costs, the regulation includes the following additional guidance:

- (a) *Insurance by purchase or by self-insuring includes-*
 - (1) *Coverage the contractor is required to carry or to have approved, under the terms of the contract; and*
 - (2) *Any other coverage the contractor maintains in connection with the general conduct of its business.*
- (b) *For purposes of applying the provisions of this subsection, the Government considers insurance provided by captive insurers (insurers owned by or under control of the contractor) as self-insurance, and charges for it shall comply with the provisions applicable to self-insurance costs in this subsection. However, if the captive insurer also sells insurance to the general public in substantial quantities and it can be demonstrated that the charge to the contractor is based on competitive market forces, the Government will consider the insurance as purchased insurance.*

Allowable Costs, uncertainty and risk – Working paper

- (c) *Whether or not the contract is subject to CAS, self-insurance charges are allowable subject to paragraph(e) of this subsection and the following limitations:*
- (1) *The contractor shall measure, assign, and allocate costs in accordance with 48CFR9904.416, Accounting for Insurance Costs.*
 - (2) *The contractor shall comply with (48 CFR) part 28. However, approval of a contractor's insurance program in accordance with part 28 does not constitute a determination as to the allowability of the program's cost.*
 - (3) *If purchased insurance is available, any self-insurance charge plus insurance administration expenses in excess of the cost of comparable purchased insurance plus associated insurance administration expenses is unallowable.*
 - (4) *Self-insurance charges for risks of catastrophic losses are unallowable (see 28.308(e)).*
- (d) *Purchased insurance costs are allowable, subject to paragraph(e) of this subsection and the following limitations:*
- (1) *For contracts subject to full CAS coverage, the contractor shall measure, assign, and allocate costs in accordance with 48CFR9904.416.*
 - (2) *For all contracts, premiums for insurance purchased from fronting insurance companies (insurance companies not related to the contractor but who reinsure with a captive insurer of the contractor) are unallowable to the extent they exceed the sum of-*
 - (i) *The amount that would have been allowed had the contractor insured directly with the captive insurer; and*
 - (ii) *Reasonable fronting company charges for services rendered.*
 - (3) *Actual losses are unallowable unless expressly provided for in the contract, except-*
 - (i) *Losses incurred under the nominal deductible provisions of purchased insurance, in keeping with sound business practice, are allowable; and*
 - (ii) *Minor losses, such as spoilage, breakage, and disappearance of small hand tools that occur in the ordinary course of business and that are not covered by insurance, are allowable.*
- (e) *Self-insurance and purchased insurance costs are subject to the cost limitations in the following paragraphs:*
- (1) *Costs of insurance required or approved pursuant to the contract are allowable.*
 - (2) *Costs of insurance maintained by the contractor in connection with the general conduct of its business are allowable subject to the following limitations:*
 - (i) *Types and extent of coverage shall follow sound business practice, and the rates and premiums shall be reasonable.*
 - (ii) *Costs allowed for business interruption or other similar insurance shall be limited to exclude coverage of profit.*
 - (iii) *The cost of property insurance premiums for insurance coverage in excess of the acquisition cost of the insured assets is allowable only when the contractor has a formal written policy assuring that in the event the insured property is involuntarily converted, the new asset shall be valued at the book value of the replaced asset plus or minus adjustments for differences between insurance proceeds and actual replacement cost. If the contractor does not have such a formal written policy, the cost of premiums for insurance coverage in excess of the acquisition cost of the insured asset is unallowable.*

- (iv) *Costs of insurance for the risk of loss of Government property are allowable to the extent that-*
 - (A) *The contractor is liable for such loss;*
 - (B) *The contracting officer has not revoked the Government's assumption of risk (see 45.104(b)); and*
 - (C) *Such insurance does not cover loss of Government property that results from wilful misconduct or lack of good faith on the part of any of the contractor's managerial personnel (as described in FAR 52.245-1(h)(1)(ii)).*
- (v) *Costs of insurance on the lives of officers, partners, proprietors, or employees are allowable only to the extent that the insurance represents additional compensation (see 31.205-6).*
- (3) *The cost of insurance to protect the contractor against the costs of correcting its own defects in materials and workmanship is unallowable. However, insurance costs to cover fortuitous or casualty losses resulting from defects in materials or workmanship are allowable as a normal business expense.*
- (4) *Premiums for retroactive or backdated insurance written to cover losses that have occurred and are known are unallowable.*
- (5) *The Government is obligated to indemnify the contractor only to the extent authorized by law, as expressly provided for in the contract, except as provided in paragraph(d)(3) of this subsection.*
- (6) *Late premium payment charges related to employee deferred compensation plan insurance incurred pursuant to Section 4007 (29 U.S.C. 1307) or Section 4023 (29 U.S.C. 1323) of the Employee Retirement Income Security Act of 1974 are unallowable.*

Federal Acquisition Regulation, 31.205-19 Insurance and Indemnification.