

3. Optimising recognition accuracy

What level of recognition accuracy should you expect?

When Dragon is familiar with your speech and vocabulary, and your speech is clear, you should expect a recognition accuracy level of around 95% or higher. That is, for every hundred words or so that you dictate, Dragon should not misrecognise more than five.

Many people express surprise that Dragon has difficulty recognising simple, common words, like 'the', 'that', 'at', 'all', 'or', 'for', 'but' etc. This is because these 'little' words often sound similar. In addition, we might vary our pronunciation of these words depending on the context. Dragon will have less trouble recognising longer, more distinctive sounding words, particularly technical language.

In general, Dragon will have most difficulty recognising 'little' words, and words with no hard consonant sounds.

The level of recognition accuracy will be affected by:

- the clarity of your speech
- the length of the phrase — speaking in long phrases gives dragon more context to work with
- the quality of your microphone and soundcard
- the positioning of your microphone
- levels of background noise
- recognition could also be affected to some extent by your computer specs, particularly if processor is slow and there is not enough RAM
- the extent to which you have customised Dragon to become familiar with your speech patterns

What you can do to optimise recognition accuracy

Check audio settings regularly

- Say "Check Audio Settings" (or by hand in V11 go to DragonBar > Audio > Check microphone) and follow the prompts.
- Choose the appropriate sound system. Generally you will see either the computer's on-board sound card only, or the computer's on-board sound card as well as a USB device (as in the image below), for example USB pod or USB microphone. If using a USB pod or USB microphone, this is the sound system you should select. If the microphone is plugged into the mic-in-jack you will generally see the computer's on-board sound card only.



Be aware of microphone position

- Most microphones suitable for use with Dragon are directional microphones. Make sure the microphone on the mouthpiece boom is facing in the right direction ie towards you. The correct direction will often be indicated by a white dot, which should face towards you.
- Position the microphone:
 - ❖ level with your mouth — don't let it drop to chin level;
 - ❖ at the corner rather than directly in front of your mouth, so it doesn't pick up breath noise;
 - ❖ one or two thumb widths out from your face .

Speaking style

Many people underestimate how clearly you need to speak to Dragon to achieve a high level of recognition accuracy. Dragon will generally not recognise you well if you speak in a conversational style.

- speak as clearly as you can —as if you were reading the evening news, don't speak in a conversational style
- an assertive, punchy style works well. Talk like you expect Dragon to obey you.
- avoid running words together
- articulate each syllable and word more than you would in normal speech. Take particular care to articulate the 'little' words clearly — 'the', 'for', 'all' etc
- Speak in long phrases wherever possible, this gives dragon more context to work with
- don't elongate words
- pause before and after commands, but not in the middle

Correct recognition errors

- It is important to correct *correctly*, otherwise you will confuse Dragon and recognition accuracy will deteriorate.
- Correct *only* when you have spoken clearly and Dragon has misrecognised what you said. Don't correct text when you have stumbled or changed your mind about what you want to say — in this case, delete text or select and re-dictate.
- It is a good idea to correct in context. That is, correct one or two words each side of the misrecognised word/s. This gives dragon more information about the context of word usage.
- To correct recognition errors say "Correct that", to correct your last phrase or selected text; or "Correct <wrong words>".
- For more information on correcting, see training document 2. '*Correcting Recognition Errors*'.

Refine the vocabulary

It is essential to refine the vocabulary so it reflects your language. If you dictate a word that is not in the vocabulary, Dragon has no chance at all of recognising it.

Say "Edit Vocabulary" (or by hand in V11 go to DragonBar > Vocabulary > Open vocabulary editor) to bring up the vocabulary editor where you can:

- Add words and phrases. It is particularly important to add frequently used phrases to the vocabulary. Note that the correction process and the Vocabulary Builder will add new words to the vocabulary *separately*, not as phrases;
- Use a different spoken form if appropriate:
 - You can create spoken form shortcuts for long phrases. For example, for the written form 'Department of Sustainability, Environment, Water, Population and Communities', the spoken form could be "insert sustainability".
 - Another example of using a different spoken form is for telephone numbers. The written form would be your phone number '0434 848 657', spoken form could be "insert mobile number".
 - A different spoken form can also be used to improve recognition of words and phrases that are not spelt very phonetically. For example, with a foreign name such as Mussig, if Dragon had difficulty recognising this word you could use a spoken form such as "Muzig" that more closely resembles the pronunciation of the word in English.
- Delete from the vocabulary any unwanted words that appear in dictation. For example if your name is Sue, you could improve recognition of this word by deleting unwanted homophones such as 'sou', 'Sioux' and 'Siew'.

- Train your pronunciation of words and phrases that are frequently misrecognised. Select the word or phrase in the list of vocabulary, say or click "Train", then "Go", say the word or phrase, then "Done".
- For more information, see Dragon help> Contents> Improving recognition accuracy > Personalising your Dragon vocabulary

Adjust accuracy versus speed slider

Go to Dragon bar > Tools > Options > Miscellaneous. Under 'Speed vs Accuracy', adjust the slider bar towards 'Most Accurate'. Note there will be a trade-off between speed and accuracy.

Use Vocabulary Builder

- Use Vocabulary Builder to scan electronic text and your e-mail sent items folder. Vocabulary Builder will identify and automatically add to the vocabulary any unfamiliar words. It will also note the frequency and context of word usage, and adapt the statistical model accordingly. For instructions see Training document 4, available from <http://www.viva-voce.com.au/downloads.html>

Do additional training readings

- In V11 go to Dragon bar > Audio > Read text to improve accuracy.
- In version 10 go to DragonBar > Tools > Accuracy centre > perform general training
- Read the first couple of sentences that appear in the window. You will then be presented with a choice of readings. I suggest you choose one of the readings marked 'easier'. These take around 15 minutes. The readings marked 'more difficult' can take up to 50 minutes to read. Generally I recommend doing a maximum of one or 2 additional training readings (unless you speak English with a foreign accent, in which case it is worth doing more readings). This is because your speech when composing text will differ from your speech when reading, so if most of your dictation involves composing, it is probably not worth doing more than 2 or 3 additional readings. Having said that however, if Dragon's recognition deteriorates, doing an additional training reading from time to time could help put it back on track.

Create text macros to produce frequently used text

- For instructions, see '*How to create Dragon macros*', available at <http://www.viva-voce.com.au/downloads.html>

Troubleshooting recognition problems

If Dragon won't recognise *particular* words or phrases

- Correct as you dictate
- Edit the vocabulary
 - make sure the word or phrase is there – if not, add it
 - delete similar words if they are appearing in your dictation
 - use a different spoken form if appropriate
 - add phrases
 - train your pronunciation of the word or phrase
- Run Vocabulary Builder, using text in which the word/s appears multiple times. Dragon will then assign a higher probability to this word or phrase in the statistical model.
- As a last resort, create a text macro

If Dragon's general level of recognition deteriorates, or doesn't appear to hear anything at all

- Check audio settings. Make sure you select the appropriate sound system.
- Is the white dot on the microphone mouthpiece boom facing you?
- Close all applications including Dragon and re-launch. If that doesn't work, restart your computer
- Check that all microphone connections are plugged in firmly
- Does your microphone or USB pod have a mute button? Make sure mute is off. Buddy USB pods have a mute button which can easily be pressed accidentally when plugging it in (if orange light is flashing, the mute button will be on so turn it off)
- Try plugging USB pod or USB microphone into a different USB port. It is best to use a USB port at the back rather than in front of the computer.
- Do an additional training reading (see instructions above)
- Consider whether your microphone could be faulty. Microphones have a limited life particularly with daily use. Be prepared to replace your microphone about every 1 to 2 years if necessary. If you use the same mic in different locations, consider purchasing an extra mic rather than transporting it. Mics are fragile and easily damaged by knocks and bumps. If you have access to a different mic, use it to see if Dragon's performance is better (do an audio check after plugging in a different microphone).
- Check whether recognition is better in Dragon pad. Say "Open Dragon pad" or go to Dragon bar/tools/Dragon pad. If Dragon works normally in Dragon pad, this indicates that the problem is located in Dragon's interaction with other applications e.g. Microsoft Word. It is important to open Dragon first, before other applications like Microsoft Word and Outlook. If you have lost 'Select and

Say', ie the ability to select and/or correct particular words, follow the instructions in the *Dragon FAQs and Troubleshooting Guide* to restore 'Select and Say'.

- Restore a backup of your Dragon User, in case the problem is located in your user
- If you don't have a backup of your Dragon User, set up a new user (see <http://www.viva-voce.com.au/downloads.html> for instructions). Dragon Users sometimes corrupt, so it is important to take regular backups.
- If you have been using the same Dragon User for a long time and particularly if you have not been correcting correctly, recognition accuracy could deteriorate and might be improved by setting up a new Dragon User.
- Have you recently upgraded software e.g. moved to Windows 7 and/or Microsoft Office 2007? Check that your version of Dragon is compatible with your other applications. Dragon version 10.1+ is required for compatibility with Windows 7.

If the level of recognition accuracy has *never* been adequate

- Is your speech clear? See information on speaking style, on previous page.
- Check that your Dragon User has been set up with the appropriate speech model. In V10 go to Dragon bar > naturally speaking > open user. In V11 go to DragonBar> Profile > Open user profile. Select your user. Click on Properties and check that the 'Speech model' (V10) or Language (earlier versions) is appropriate e.g. 'Australian'.
- Check whether the dictation source is appropriate. That is, 'microphone in mic-in-jack' if using an analog microphone plugged into the mic-in-jack, or 'USB microphone' if using a USB microphone or USB pod, plugged into a USB port. To check, go to the Open user dialogue following the instructions above. If the dictation source is not correct, you can assign a different dictation source by going to the open user dialogue/select your user/source/new. Choose the appropriate dictation source from the drop-down list, and follow the prompts from here.
- Is your microphone suitable for use with Dragon? You will need a high-quality, active noise cancelling microphone, particularly if you work in an open plan office. Note that the microphones provided with the software are generally not high-quality.
- Is your soundcard suitable for use with Dragon? Use of a USB pod (external soundcard) is recommended.



- Does your computer have a fast enough processor, and enough RAM? For recommended specs see <http://www.viva-voce.com.au/information-and-faqs.html>
- Are you trying to use Dragon in applications that it is not compatible with? See the feature comparison matrix at <http://www.nuance.com/naturallyspeaking/products/product-matrix.asp>